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THE PARISH DOCTOR: ENGLAND'S POOR LAW MEDICAL OFFICERS AND MEDICAL REFORM, 1870-1900 [1]

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While sickness and poverty have been familiar partners throughout the centuries, state responsibility for caring for the sick poor has developed grudgingly and slowly in modern society. Nineteenth century England, wrestling with the evils accompanying industrialism, with new concentrations of population in crowded, dirty cities, all levels of society mutually vulnerable before the sweeping cholera epidemics, had moved by mid-century away from the policy of supplying only minimum relief to the poor. Occasionally, in fact, the healthy destitute who were assisted under the poor law were in a more favorable condition than their working class competitors. But the gap between legal provision for medical care to the poor and provision for adequate care (even by nineteenth century standards) was still wide by 1871 when the Poor Law Board was merged in the new Local Government Board. Reformers like Doctors Neill Arnott, James Kay Shuttleworth, Southwood Smith and Henry Wyldbore Rumsey, supported by the influential medical journal, the *Lancet*, and

[1] Presented in part to the 32nd Annual Meeting of the American Association for the History of Medicine, Cleveland, Ohio, May 8, 1959. This article is abstracted from one chapter of a dissertation: "Doctors and the State: A Study of the British Medical Profession and State Intervention in Public Health, 1870-1911," which was submitted to the University of London for the Ph. D. degree, 1953.

by the Workhouse Infirmary Association, had enlarged the concept of state responsibility for curative treatment. Nevertheless, medical care to the poor was still hedged within a pervasive atmosphere of deterrence.

This dichotomy was reflected in the respective attitudes of the central poor law authorities and the local Boards of Guardians. The central government authorities from 1847 to 1871 began to bring administrative pressure to bear upon Guardians to improve medical services to the poor. Time and again, however, the Boards of Guardians blandly resisted these overtures and continued to curtail medical relief to save the ratepayer's pocket. The Guardians' actions stemmed from the nineteenth (and in part the twentieth) century view of the pauper, even the sick pauper primarily as a malingerer, draining the substantial members of the community, and therefore to be discouraged from applying for any public assistance. The harsh Poor Law Act of 1834 had been expressly designed to make the acceptance of relief so disagreeable as to exclude all but the literally homeless and starving.

Actively opposing the application of "deterrence" in poor law treatment were the leaders of the humanitarian movement. Dr. Joseph Rogers, President of the Poor Law Medical Officers Association, inveighed with all the rhetoric of nineteenth century fundamentalism:

> It has often been asserted that the inmates of a workhouse are generally worthless people, but I demur to that conclusion entirely. Of this I am certain, that many a person who has died in the infirmary of the sick ward of a workhouse has gone straight to Abraham's bosom as has ever passed from a bishop's palace or the death chamber of a king or a queen . . .[2]

Rogers was only one of many. Looking a little more closely at the climate of public opinion which existed in the England of the sixties and seventies, there is discernible a developing spirit of public responsibility towards the poor and the sick poor, reflected in periodical writings. Thomas Wakley, founder of the reforming medical journal the *Lancet*, headed the crusade, and newspaper articles began to follow his lead.[3]

[2] Joseph Rogers, *Reminiscences of A Workhouse Medical Officer* (London: T. Fisher Unwin, 1889), p. 244. Rogers, the descendant of three generations of medical men, devoted his life to the reform of medical relief to the indigent poor. He was one of the agitators for the prohibition of intramural interment in London and the repeal of the window tax.

[3] Thomas Wakley (1795-1862) founded the *Lancet* in 1823, after a number of years in medical practice, to expose abuses in hospital administration and to report medical lectures. A close friend of William Cobbett, Wakley was one of the leaders in the medical reform movement of the first half of the century. He became a medical authority in Parliament, where he represented Finsbury from 1835-1852. Wakley speared the

When she described the time-spirit of the mid-Victorian age, Beatrice Webb, that charming and spiritual pragmatist, suggested that it was a period when "the impulse of self-subordinating service was transferred consciously and overtly, from God to man." [4] Certainly public attention to the sick poor was only one part of the new humanitarianism driving members of the English middle class to look outside themselves for a greater personal fulfillment. Organizations like the Society for the Relief of Distress and the London Society for Organizing Charitable Relief and Repressing Mendacity selected their memberships from a charitable and religious middle class group, anxious of ridding themselves of the fundamental conflict between the Christian ethic and the struggle for survival. Despite this, the spirit of the greatest of utilitarians, Jeremy Bentham, was still strong, and Joseph Rogers wisely used utilitarian as well as humanitarian arguments to urge the advantages of a more generous view toward the sick poor saying:

> . . . that a more liberal administration of poor relief meant true economy to the rate-payers, because if they cut short the sickness of the poor, and if they diminished the amount of deaths that took place among the breadwinners, they would, as the ultimate result, economize expenditure and out-relief.[5]

The late sixties had continued to be a period of depressed trade conditions, and an average of 4.6 per cent of the total population of England and Wales, slightly over one million persons, was forced to apply for poor relief during the years 1866-1871.[6] Economic recovery was slow especially in London. The national expenditure for poor relief, as recorded by the Local Government Board, advanced steadily from £6,439,517 in 1865-1866, to £7,673,100 in 1868-1869 and rose to £8,007,403 in 1871-1872.[7]

It was in this *Zeitgeist*, whose philosophic and economic threads can only be traced briefly here, that some four thousand poor law medical officers carried out their duties in hundreds of parishes throughout Eng-

Lancet campaign to eradicate the common practice of adulteration of foods and drugs, and took part in the movement to improve poor law medical service, shortly before his death. See Samuel Squire Sprigge, *The Life and Times of Thomas Wakley* (London: Longmans, Green and Co., 1897), *passim*.

[4] Beatrice Webb, *My Apprenticeship* (London, New York, etc.: Longmans, Green and Co., 1926), p. 138.

[5] Rogers, *op. cit.*, p. 239.

[6] J. H. Clapham, *The Economic History of Modern Britain: Free Trade and Steel, 1850-1868* (Cambridge: Cambridge University Press, 1952), p. 432.

[7] *Annual Report of the Local Government Board for 1876-1877*, p. xv. The total population at this time was recorded as between 21,000,000 and 22,000,000.

land and Wales.[8] The period 1871-1900 is an interesting one in which to examine some of the facets of poor law medical care and the role of the poor law medical officer in advancing that care. It was a period marked by the establishment of a new central authority for public health; a span of years of great importance in scientific advancements, both in preventive and curative medicine; a period of changing public attitudes towards the functions of the central government in caring for the health of the people of England and Wales.

Qualifications of the Parish Doctor

By 1870 poor law medical officers, who earlier in the century had been chosen "without regard to merit or qualification, and mainly for their willingness to accept the lowest rate of pay,"[9] were appointed more selectively. Following passage of the Medical Qualification Act of 1858, the Poor Law Board demanded that all poor law medical officers should be registered and should possess a legal qualification to practice both medicine and surgery in England and Wales.[10] This double qualification required that the poor law medical officer have obtained better professional training than many of his medical colleagues in private practice. This is not to say, of course, that all parish doctors ranked with Harley Street men. But their status within their profession and in the eyes of the public, had increased remarkably.[11] For the most part they were engaged on a fairly permanent basis, and in many large cities employed full-time as medical officers for the workhouses. Salaries were set by local Boards of Guardians, varied greatly, and were the cause for frequent complaint. Despite this, at the close of the nineteenth century, the posts were sought

[8] The annual reports of the Local Government Board during the period 1871 to 1900 irregularly cite numbers of poor law medical officers. For example, the 1874-75 report lists 4,212; the 1876-77 report, 4,233; the 1886-87 report, 4,293 medical officers. Hereafter, the annual reports of the Local Government Board and of the Poor Law Board are cited respectively as *Ann. Rep. L. G. B.* or *Ann. Rep. P. L. B.*

[9] B. L. Hutchins, *The Public Health Agitation. 1833-1848* (London: A. C. Fifield, 1909), p. 127.

[10] Ruth G. Hodgkinson, "The Medical Services of the New Poor Law, 1834-1871," Ph. D. dissertation, University of London, 2 vols., 1950, vol. 2, p. 588. A summary of this dissertation was published under the title "Poor law medical officers of England, 1834-1871," *J. Hist. Med. & Allied Sc.*, 1956, *11*: 299-338. As early as 1842 the Poor Law Commissioners in their General Medical Order Number 5 had set up four alternative licensing requirements for poor law medical officers, not all of which, however, required a double qualification in medicine and surgery. See *Ann. Rep. Poor Law Commissioners, 1842*, p. 130.

[11] Hodgkinson, "Poor law medical officers of England, 1834-1871," pp. 332-333.

after competitively, as they carried many advantages—often providing the holders with a " publicly guaranteed introduction to the neighborhood." [12]

As early as 1868 the Poor Law Board had also expressed themselves firmly on the use of unqualified assistants to poor law medical officers, saying: " The Board feel it necessary to request the cooperation of Boards of Guardians in discouraging the employment of unqualified assistants." [13] Poor law medical scandals, frequent in the forties, showed a marked reduction by the eighteen sixties. When, in 1869, the Poor Law Board began to include in its annual reports the number of dismissals of medical officers, the number was negligible.[14] The Poor Law Medical Officers Association had worked industriously to raise the professional standards of its members throughout the country. Nevertheless, much remained to be done in the years after 1870 before the higher standards of professional competence were uniformly applied by Boards of Guardians throughout the country.

Poor Law Medical Officers and Central Supervision

As is often the case, the relationship between the Local Government Board and the poor law medical officer was more centralized and authoritarian on paper than in practice. Geographical distance from authority often provides a comfortable excuse for ignoring rules and regulations; in many instances this was the case with poor law medical care.

The new Local Government Board, set up in 1871 and largely dominated by administrative personnel of the defunct Poor Law Board, controlled the administration of grants to local authorities and sent out directives and circulars regarding administrative procedures and the medical treatment of the poor. The Local Government Board also maintained a central inspectorate for poor law purposes.

Central Inspection. One of the greatest difficulties in the central poor law inspection service in this period was the lack of adequate medical supervisory staff. Local Government Board inspectors (like the old Poor Law Board inspectors) were laymen, not physicians, and yet they were empowered to survey and report regularly upon the quality of medical treatment to the sick poor.

The lack of medical supervision had earlier in the century been brought to the attention of an investigating committee in 1854, when a majority

[12] Samuel S. Sprigge, *Medicine and the Public* (London: William Heinemann, 1905), p. 146.

[13] *Ann. Rep. P. L. B. for 1868-69*, p. 32.

[14] Hodgkinson, *op. cit.*, vol. 2, p. 712.

of the doctors giving evidence advocated a medical supervisory staff in the Poor Law Board. Dr. Henry Rumsey had noted in his *Essays on State Medicine* of 1856 that the lay inspectors of the Poor Law Board although they:

> . . . unanimously deprecated the appointment of *medical* authorities, they nevertheless admitted that there were no securities for the proper treatment of the sick beyond the legal or nominal standard of qualification possessed by the medical officers and . . . that there was no supervision of practice, except a cursory perusal by the Board of Guardians of the weekly sick lists presented to them . . .[15]

Some small attempt at central medical inspection had been made by the appointment of Dr. Edward Smith as a poor law inspector in 1865, with special reference to medical relief. Dr. Smith was in no sense, however, a general or administrative supervisor of the local poor law medical officers. His early duties dealt with an investigation into workhouse hospitals in the "metropolis and provinces" and with the improvement of poor law dietaries. In March of 1872 Dr. Smith's office was abolished.[16]

There were later added to the Local Government Board two medical inspectors, Dr. Fuller for provincial England and Dr. (later Sir) Arthur Downes for the London area. The number was far too limited to provide any real medical supervision.[17] Dr. Fuller's visits in the provinces were customarily only made upon the general request of the district lay inspector. Sir Arthur Downes, who served as Medical Inspector of the Board from 1889 to 1918, was to be instrumental in improving London poor law hospital treatment of pulmonary tuberculosis.[18] During the period 1871-

[15] Henry Rumsey, *Essays on State Medicine* (London: John Churchill, 1856), p. 274.

[16] Local Government Board, Government Office Correspondence, Nos. 17557/72 and 17558/72, of March 25, 1872.

Dr. John Simon, the Medical Officer of the Local Government Board who was finally defeated in his reforming efforts by the officialdom of the Board, commented on Dr. Smith's duties as follows: ". . . according to all I have heard in after years from Dr. Smith on the subject of his work in the office, the old secretarial belief as to the best way of dealing with matters of medical administration, had vigorously survived the fact of his appointment as Medical Officer of the Board; and I understand that he, in relation to such matters, was not expected to advise in any general, or any initiative sense, but only to answer in particular cases on such particular points as might be referred to him." Simon, *English Sanitary Institutions*, 2nd ed. (London: John Murray, 1897), p. 352.

[17] Sir Arthur Newsholme, *The Last Thirty Years in Public Health, Recollections and Reflections on My Official and Post-Official Life* (London: G. Allen Unwin, 1936), pp. 92-93.

[18] Sir Arthur MacNalty, *The History of State Medicine in England, Being the Fitzpatrick Lectures of the Royal College of Physicians of London for 1946-1947* (London: The Royal Institute of Public Health and Hygiene, 1948), p. 65.

1900, however, these two medical inspectors had relatively little effect on the over-all pattern of poor law medical care.

The staff of general inspectors who supervised the work of poor law medical officers from 1871-1900 was well imbued with poor law principles. Only a dozen in number for many years (covering all of England and Wales), by 1888 the small group had been strengthened to 15 and by 1894 totalled 18. Inspectors were charged with interpreting the policy established by the Board to local Guardians, and with supervising the administration of central policy in the local districts. Implementing these charges included an inspector's attending meetings of each Board of Guardians within the district at least once or twice a year, making semi-annual visitations to all poor law establishments in the district and preparing annual reports upon conditions.

A German investigator of the eighties, Paul Aschrott, commented that "the social position of the inspector is such that there can be no suspicion of personal interest in the advice which he gives as to local administration." [19] Indeed, when he queried the qualifications of the inspectors, Aschrott was told by the Local Government Board: ". . . they must, above all, be gentlemen, who, on account of their previous occupation and their position in life, enjoy consideration and are accustomed to exercise authority. Stress is laid upon a certain talent for organization, and they must already have shown some interest in the welfare of the poor." [20]

From the quality of their reports, it is clear that at least a good proportion of the general inspectors were able and well-motivated men. But there was little in either the inspector's duties or social position which qualified him to judge the professional adequacy of the poor law medical officer.

Central Directives. The central control which operated on the parish doctor other than in the figure of the district inspector lay in the General Orders and circular policy statements which the Local Government Board issued from time to time. An examination of these sporadic directives together with ancillary material in the otherwise invaluable correspondence files of the Local Government Board gives a very limited picture of the

[19] Paul Felix Aschrott, *The English Poor Law System, Past and Present*, 2nd ed. (London: Knight, 1902), p. 207. Dr. Aschrott, a Berlin judge, was a thorough, highly skilled analyst, whose study was recognized by contemporary officials of the English poor law system as an excellent survey. The book was translated from the German by Herbert Preston-Thomas, one of the most able of the poor law inspectors, and issued in two editions (1888 and 1902).

[20] *Ibid.*, p. 208.

relationship between central policy and the extension of the poor law medical service.[21]

Critics of the poor law system claimed that such regulations as existed were of too permissive or suggestive a nature to be used to compel local Boards of Guardians to provide adequate medical care for their poor. Even when certain directives were called to the attention of local Boards, they might be ignored.[22] In the main, the over-all outline of duties seems not substantially to have changed during the period 1871-1900. New orders for District Medical Officers had been issued in April, 1871, revising the orders of 1847, to make provision for the new establishment of infirmaries. The 1871 orders instructed District Medical Officers to attend the workhouse dispensary every day except Sundays for a minimum of an hour, or for a longer period as directed by the Guardians. Provision was also made in the same orders for attendance:

. . . at the home of the poor person on whose behalf application is made, or else-

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[21] At the time the correspondence files of the Local Government Board were used for this research, and for study of other medical activities of the Board, the files were under the administrative jurisdiction of the Ministry of Housing and Local Government. The volume of records preserved by the Ministry is considerable. Over 9,000 bound volumes of manuscript and typescript materials of the Poor Law Unions are in existence, in battered but legible condition. The most valuable material for locating central policy of the Local Government Board during the years 1871-1900 is contained in two categories of papers: 1. Local Government Board "Government Office Correspondence" (75 volumes, 1872-1896), and Local Government Board "Miscellaneous Correspondence" (160 volumes, 1872-1900). The "Government Office Correspondence" is particularly valuable, containing detailed material on the Board's administrative procedures, drafting of Government Bills, correspondence with other Government offices, internal administrative memoranda and draft LGB orders. The Board, at its inception, adopted the useful system of mounting correspondence and memoranda on large paper, and circulating these papers within the Board for official comment. This material, as preserved in the bound files, enables the observer to trace much of the development of the Board's policy. The large file of "Miscellaneous Correspondence" is also useful for interpretations of policy to the public, for origins of policy within the Board, for reports of inspectors, and correspondence with local authorities.

All of these unpublished materials are an invaluable supplement to the published annual reports of the Local Government Board, which appear in the *Parliamentary Papers*.

[22] The *Lancet* reported several interesting instances where the Brentford Guardians informed the Local Government Board that they would do nothing to remedy the sanitary situation in their workhouse. The *Lancet* commented on a similar case of open defiance by the local authority, and noted that the Board seemed to be "utterly impotent to enforce commands given out with an air of apparent authority." (The *Lancet*, 1875, *1*: 100). Open defiance was probably the exception, but by an easy sliding over the central orders, local Guardians managed to pursue policies very different than were actually laid down by the Local Government Board.

where as the case may require, and supply all requisite medical or surgical advice and assistance to every pauper in the District placed under his charge . . .[23]

Addditional regulations provided for the maintenance of a medical relief register, notification to the Boards of Guardians of paupers named semi-annually to a permanent medical relief list, and attendance at meetings of the Dispensary Visiting Committee when required.

Duties prescribed in 1896 for medical officers attached to the workhouse were very similar: personal attendance upon "as far as may be practicable the poor persons entrusted to his care," reporting to the Guardians as required upon the conditions of paupers, attendance at the workhouse at fixed periods, examining the state of paupers on their admission, maintenance of records, giving directions for the classification and treatment of sick paupers, children, and nursing mothers.[24]

With a more adequate professional inspection service the quality of medical care provided to the poor under these over-all regulations might have been better. Without the presence, either of adequate enforcing authority or of any national standard of performance, such general and permissive regulation made for not only considerable variation in performance but outright abuse.

Indigenous Limitations in Poor Law Medical Care

More than general regulations and ineffective inspection severely limited the actual and potential role of medical officers treating the poor. The basic dichotomy of poor law medical service was as present in 1871 as when it was expressed by Beatrice Webb in 1909:

> What many members of the Poor Law Medical Service feel most is not the miserable pay they get, not the lack of official appreciation, or encouragement nor even the absence of honours and dignity, but the *extraordinarily narrow scope* that, under the necessary limitations of the Poor Law they find for useful work. It is not encouraging, for instance, to have pass through one's hands (as the Poor Law Medical Officer does) one third of all the deaths from phthisis; and yet, as several Poor Law doctors told us, never to have seen among them a single curable case. It breaks the spirit of a man who cares anything at all about his professional work to have to go on year after year merely pretending to deal with cases, which have come to him only when destitution has set in, and therefore usually too late for any permanently remedial treatment under structural and other conditions

[23] *Annual Report L. G. B. for 1871-1872*, Appendix A, p. 9.

[24] Unnumbered circular, Local Government Board, Government Office Correspondence for 1898, "Extracts from the General Orders of the Poor Law Commissioners, the Poor Law Board and the Local Government Board Relating to the Duties of Workhouse Medical Officers."

which he knows will prevent cure, but which he, as a mere Poor Law Doctor, has no power to prevent.[25]

Measured against the curative potential of medicine today, late nineteenth century medical and surgical care was obviously very limited, and poor law treatment even more constricted. At its best poor law care was palliative treatment, most often with limited resources, and without chance of prevention.

One aspect of this fundamental problem was reflected in the provision of " medical extras." The significance of strengthening foods, often a high protein diet for the recovery of the sick, was well recognized by 1871. Yet the final decision as to whether a seriously ill workhouse patient was entitled to such " medical extras " as meat broth or stimulants rested not with the poor law medical officer, but with the Boards of Guardians. In February, 1871, the *British Medical Journal* reported the case of a Shropshire medical officer, Dr. W. P. Brooks, who complained to the Poor Law Board when an Assistant Overseer of the workhouse counteracted his order for two pounds of meat to make broth for a patient suffering from inflammation of the womb. The Poor Law Board, however, replied that they " consider that a certificate given by a Medical Officer for the allowance of nourishment or stimulants to any of his pauper patients can only be regarded as a recommendation or expression of his opinion as to what is required for such patient," and that the final decision rested with the relieving officer or Guardians. The *British Medical Journal* commented gravely: ". . . we think that the discretion of the medical officer to order nourishment necessary on medical grounds should be so far absolute as not to be interfered with by subordinate officers, whose means of judgement must be inferior to his own." [26]

The objective of the Poor Law Board, and later the Local Government Board, in leaving the final decision to the lay authorities was, of course, the pursuit of " less eligibility," and the fear that the poor law medical officer, given free reign over medical extras, would send the costs of medical relief soaring. The problem of medical extras arose repeatedly in the period 1871-1900, and the Poor Law Medical Officers Association discussed it on a number of occasions.

As the years passed after 1871, concomitant with the gradual evolution

[25] Beatrice Webb, *The Poor Law Medical Officer and His Future* [Papers Used at the Conference of the Association of Poor Law Medical Officers, 6 July 1909] (London: National Committee for the Break-up of the Poor Law, 1909), p. 4.

[26] *Brit. M. J.*, 1871, *1*: 135.

Fig. 2. A Ward in the Hampstead Smallpox Hospital. From *The Illustrated London News*, October 7, 1871, p. 345.

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in the concept of public responsibility for curative treatment, there developed a gradual relaxation in the application of "less eligibility," particularly in the larger cities. Aschrott was to note in the late eighties that in practice a medical recommendation for "extras" had almost the same effect as a direct order. Nevertheless the situation made for tension between medical officers and guardians or relieving officers, and continued to be resented by poor law medical officers.[27]

Extension of and Improvement in Poor Law Medical Facilities

One area of treatment for the sick poor underwent a marked change from 1871-1890—namely, the improvement of hospital and dispensary facilities. Early efforts of the Poor Law Medical Officers Association, in conjunction with the vigorous campaign carried out by the *Lancet* in 1864-1865, successfully aroused public opinion to the need for a reform of poor law hospital and infirmary conditions. Even before the establishment of the Local Government Board, the Poor Law Board had fully accepted the need for an improved infirmary service, and in the late sixties new institutions for the care of the sick poor began to be constructed in populous areas throughout England and Wales. Outbreaks of smallpox and the building of public infectious disease hospitals in the seventies stimulated the building of separate poor law infirmaries to replace the old sick wards in workhouses.

The greatest improvements in furnishing hospital service to the poor took place in London, where the existence of the Metropolitan Common Poor Fund facilitated the erection of the new buildings. The Metropolitan Poor Act of 1867 had been beneficial to London poor law districts in standardizing poor law medical facilities and, for the first time, bringing to the poorer districts measures of assistance which would not have been possible for them alone. In the first nine years of the operation of the Act in London, twenty-two separate infirmaries for the sick poor were opened. By 1877, only six London parishes still housed their sick poor in mixed workhouses.[28]

Extension of hospitalization for the destitute poor was accompanied by a similar provision for the class just above the destitute. Under the stimulus of the humanitarian reform pressures of the sixties and seventies, the Local Government Board moved to a position which encouraged hospital care for the poor who could not be technically classified as desti-

[27] Aschrott, *op. cit.*, pp. 237-238.

[28] Bethnel Green, Fulham, Lewisham, Paddington, Hampstead, and Mile End Old Town. See *Ann. Rep. L. G. B. for 1876-1877*, p. xxvi.

tute.[79] This new approach was originally justified on grounds of protecting the public against persons suffering with infectious diseases, whose homes did not offer adequate isolation facilities.

From 1875 it became the official policy of the Local Government Board to admit to poor law hospitals, without an order, anyone afflicted with fever or smallpox, if refusal to admit such patients involved danger. Under the Poor Law Act of 1889, the managers of the Metropolitan District Asylums were legally empowered to admit patients suffering from fever who were other than paupers.[80] The Public Health of London Act of 1891 permanently removed the possible disqualification by admittance to a pauper hospital.

It is both curious and significant that the whole process of extending poor law medical treatment to other than the destitute or to those suffering from infectious disease evolved through central administrative encouragement, from an administration still heavily scented with deterrence in other respects.

Improvements in staffing and equipment of poor law infirmaries also developed in the seventies and eighties, most notably in London and gradually in other large cities. By 1879 the Local Government Board related with satisfaction the disappearance from London inspectors' reports of such criticisms as: "no day rooms for the sick or separate kitchen, bad ventilation, inadequate lavatories, no paid nurses or nurses for sick children, no hot water supply, no infectious wards, poorly constructed sick wards." [81] The amount of space per patient, which in 1866 had been 500 to 600 cubic feet (exclusive of day room), had been improved by 1883 to 850 cubic feet. This did not equal the usual allotment of a general hospital, but was "regarded as sufficient for diseases of the chronic class treated in poor law infirmaries." [82] The ratio of poor law

[79] Beatrice and Sidney Webb, *English Poor Law Policy* (London, New York, etc.: Longmans, Green and Co., 1910), pp. 211-212.

[80] Temporary legalization had been granted under the Diseases Prevention Act of 1883, which was renewed annually. This temporary Act ensured that admission under such conditions did not carry with it the stigma of disqualification. An earlier attempt in Section 15 of the Poor Law Act of 1879 had given Managers of hospitals optional power to make contracts with vestries for the admission of non-paupers, but this had not been much applied. By 1900 the Annual Report of the Metropolitan Asylums Board stated they "possessed today hospital accommodation to the extent of upward of 6,000 beds, open to any person of whatever social position who may suffer from certain classes of infectious disease."

[81] *Ann. Rep. L. G. B. for 1878-1879*, pp. xxxii ff.

[82] *Ann. Rep. L. G. B. for 1883-1884*, p. xxxiv. Most persons admitted to poor law

medical officers to patients had not been increased by 1883, but in London a majority of the medical officers served full time, and were no longer engaged in private practice.

The new standards of treatment which stemmed from scientific advancement also gradually found their way into poor law treatment, despite an undoubted time lag. Asepsis, anaesthesia, better technical equipment and the new emphasis upon skilled nursing which arose from the Nightingale tradition were all gradually adopted as the official policy of the Local Government Board, usually some time later than their general use in the large London hospitals. From time to time the lay inspectorate of the Board drew the attention of Boards of Guardians to advances in medical and hospital care, commenting on the presence or absence of the new facilities. By 1893, Robert Hedley, poor law inspector in London stated (albeit somewhat complacently) before the Royal Commission on the Aged Poor:

> The infirmaries of the metropolis are equal, I think, in their treatment of the poor to anything the poor will get in what are called the large hospitals of the metropolis . . . They are all built on the best principles of ventilation and they are all provided with medical officers . . . The Poor Law infirmaries of the metropolis now furnish between 12,000 and 13,000 beds, whereas what are called the hospitals of the metropolis, the large hospitals, St. Thomas', Bartholomews, and Guy's, I believe only provide about 5,000.[33]

The improvements in some large cities did not extend to rural areas, where poor law infirmaries were considerably less than satisfactory at the end of the century. And even in some large cities, local Boards of Guardians kept up resistance to the central policy of lessening deterrence and expanding the curative principle.[34] Outside of the big cities the lag was marked. Poor law reformers in 1909 were to comment dismally that apart from the populous cities:

> . . . the sick are still in General Mixed Workhouses—the maternity cases, the cancerous, the venereal, the chronically infirm, and even the infectious, all together in one building, often in the same ward where they cannot be treated. For the

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infirmaries suffered from such chronic diseases as bronchitis, cancer, renal disease, "senile decay," paralysis. *Ibid.*, p. xxxv.

[33] Questions 1154 and 1247, *Minutes of Evidence, Report of the Royal Commission on the Aged Poor*, 15 February 1893. See also comments on improved care in the *Ann. Rep. L. G. B. for 1898-99*, p. 85.

[34] The Manchester Guardians, for example, in an effort to exclude all but the destitute poor, forced all who applied to the poor law hospital facilities to enter through the workhouse gate. *Report of the Select Committee of the House of Lords on Poor Relief*, p. viii.

phthisical, for instance, there is (except in a few unions) no proper provision at all . . .[35]

Local Government Board officials were well aware of this lag and of the financial problem of providing separate infirmaries throughout England and Wales. In the 1894-95 annual report the following statement appears:

> It must . . . be borne in mind that the workhouses in the country districts of Wales are for the most part very small, the inmates very few, accustomed to an exceedingly simple and primitive style of life; and it takes a long time to convince the Guardians of such unions of any necessity for marching with the times so far as providing trained nurses and modern hospital appliances. Still, matters are improving steadily, if slowly.[36]

Poor Law Nursing Service

A word must be included on the gradual improvement in poor law nursing service. By the late sixties and early seventies abuses in pauper nursing care began to receive considerable publicity. Dickens' Sairey Gamp caricatured an uncomfortable reality. The foundation of the Workhouse Nurses' Association in 1879 to develop a program of trained nurses for the care of the sick poor was to be a watershed in the improvement of poor law nursing. Louisa Twining and her associates also helped to set standards and recommended accredited nurses to Boards of Guardians. By 1899 the Association, while still lamenting degrees of imperfection in nurses' training, reported to the Local Government Board on the "neat and becomingly dressed young women in suitable uniform, in place of the wretched old creatures who, in pauper dress and black caps, prowled about the beds of our sick poor."[37]

Dr. Arthur Downes, in 1865, had been successful in persuading the Poor Law Board to recommend to local Guardians that they "as far as possible discontinue the practice of appointing pauper inmates of the work-

[35] *The Failure of the Poor Law*, Pamphlet issued by the National Committee to Promote the Break-up of the Poor Laws (no place of publication, 1909), p. 7.

There were, however, very few questions raised in Parliament on the subject of Poor Law medical treatment in the eighties and nineties. Only very occasionally, as in the instance of the management of the Eastern Hospital at Homerton (See *Hansard*, January 23, 1891), was the Local Government Board asked for any public accounting of poor law medical policy.

[36] *Ann. Rep. L. G. B. for 1894-1895*, Appendix B, p. 63. See also the statement of Inspector Preston-Thomas in the *Ann. Rep. L. G. B. for 1898-99*, Appendix B, p. 133.

[37] L. G. B. Misc. Corres., No. 42722/89, Paper of the Workhouse Nurses' Association sent to the Local Government Board, April 1889.

house to act as Assistant nurses in the infirmary and sick wards." [38] Considerable improvements were made from 1865-1895 in the introduction and extension of a paid nursing service. But the Local Government Board's policy still gave excuse for many Guardians to continue with the employment of paupers as attendants to the sick.

By the end of the century it was officially recognized that the nursing of sick paupers left much to be desired. Although Guardians might be forbidden to employ paupers as nurses, it was still very difficult to find qualified women willing to serve in workhouse infirmaries.[39] Even in London, George Lansbury's testimony before the Royal Commission on the Aged Poor stated:

> The wards in the workhouse [of the Poplar Union] are very much understaffed; there are not enough nurses, and we have to rely a very great deal—very considerably—on the inmates to assist in the work of nursing and attending to the aged, infirm and sick.[40]

More especially in rural areas, Guardians were reluctant to provide in infirmaries and workhouses a degree of trained nursing service which, in time of sickness, " neither they themselves, or their families or the independent labouring classes could afford . . ." [41]

Outdoor Medical Care

The care of the sick in poor law infirmaries was only a part of the program. " Outdoor " medical care for the poor not confined to hospitals or infirmaries also underwent several changes from 1871 to 1900, including the building of dispensary facilities and a restriction of the extent of outdoor relief (in favor of indoor treatment).

During the period 1847-1871, outdoor medical attendance had been encouraged by the Poor Law Board, with no attempt to force the sick into workhouses. During the middle sixties central inspectors, together

[38] L. G. B. Gov't. Office Corres., unnumbered memorandum dated 1 April 1892 (in Vol. 150 of 1895).

[39] *Ann. Rep. L. G. B. for 1895-1896*, Appendix A, p. 112; *Ann. Rep. L. G. B. for 1897*, Appendix B, p. 27; " Workhouse Infirmaries," *Macmillan's Magazine*, July 1881, p. 225; *Ann. Rep. L. G. B. for 1893-1894*, Appendix B, p. 133.

[40] *Minutes of Evidence, Report of the Royal Commission on the Aged Poor*, 13 February 1894, Questions 13852 and 13856. Lansbury at that time was a Guardian of the Poplar Union. A return to the House of Commons from the L. G. B. dated 12 August 1896 showed as of 1 June 1896 there were 13,428 sick and bedridden in London infirmaries, with a total of 1,514 nurses for their care.

[41] *Ann. Rep. L. G. B. for 1894-1895*, Appendix B, p. 20. See also the Report of Mr. J. S. Davy in the same annual report.

with the Poor Law Medical Officers Association, began to urge the building of dispensaries at which the swelling numbers of pauper sick could regularly be treated by poor law medical officers.

The Poor Law Board in 1867 called the attention of all Boards of Guardians in London to sections of the Metropolitan Poor Act of that year which related to the provision of dispensaries in London.[42] By 1871 six poor law dispensaries had been started in London; the following year nine appeared in the provinces, and inspectors urged the use of the dispensary system in other urban and rural districts of England and Wales. Outside London, however, building of dispensaries proceeded slowly in the following years.

In part the lag was associated with a new policy initiated in 1871 by poor law-Local Government Board authorities aimed at reducing outdoor relief and forcing the sick poor into the newly erected infirmaries. This policy, so close to a reversion to the principles of 1834, was carried out during the period when admission of other than the purely destitute to poor law infirmaries was being extended. The policy of restricting outdoor relief was enforced through the Board's inspectorate rather than by any specific circulars of the Local Government Board.[43] In actuality, infirmary treatment was often a considerable improvement on the normal housing conditions of the poorer classes.

Gradually, however, more and more dispensaries began to make their appearance. By 1886 forty-four serviced the London poor, and the Local Government Board noted that the original objections of some London guardians to establishing dispensaries on the grounds of expense had disappeared by 1888. However, there was no significant change in the numbers of paupers treated in outdoor medical care from the mid-eighties until the end of the century,[44] and testimony before the Royal Commission on the Aged Poor in 1895 confirmed the prevalence of a policy which still restricted outdoor care in favor of indoor treatment.[45]

[42] *Ann. Rep. P. L. B. for 1868-1869*, p. 18.

[43] Beatrice and Sidney Webb, *op. cit.*, pp. 208-209.

[44] The annual reports of the L. G. B. show the following numbers of paupers attended in outdoor relief (including those both on the permanent medical list, and those for whom orders for attendance were issued):

1887 (116,267);	1888 (116,218);	1889 (113,072);	1890 (119,041);
1891 (115,961);	1892 (118,610);	1893 (131,440);	1894 (118,527);
1895 (132,645);	1896 (116,893);	1897 (112,956);	1898 (110,419).

[45] *Minutes of Evidence, Report of the Royal Commission on the Aged Poor, 1895*, Questions 2633, 2638, 17456 ff.

The Poor Law Medical Officers Association and Reform

It was among these changing trends in poor law administration that the parish doctor carried out his daily routine. Shifts in policy affected individual poor law medical officers at different times, depending on the attitudes of local Boards of Guardians. The poor law medical officer, of course, was not merely the passive instrument of authority in all this, but was also a participant in the evolution of a broader, more humanitarian administration of the service.

The relation of the parish doctor to the widening of society's obligation to the sick poor cannot be evaluated by any precise scientific measurement. Like all pressures in the complexities of industrialized society it was only a part of the kaleidoscope pattern of a rapidly changing world. It is impossible under traditional methods of historical research to utilize the individual annual reports of over 4,000 poor law medical men serving in England and Wales for this thirty year period. Many, indeed, have been destroyed, or exist only in local files. Nor is there any evidence which (if such task could be performed with the relentless efficiency of IBM methods) could determine the reactions of the Guardians to these reports. We thus must view the poor law medical officer primarily through reported activities of his group association.

The Association. By 1871, there was in existence an articulate professional organization, headed by the redoubtable Dr. Joseph Rogers, which represented the poor law medical officers of England and Wales. Stemming originally from the membership of the Poor Law Committee of the Provincial Medical and Surgical Association, the group had passed through several stages. In 1868 the organization known as the Metropolitan Association of Poor Law Medical Officers re-constituted itself as the Poor Law Medical Officers Association, and its Council was revised to include an equal representation of metropolitan and provincial members.[46] The Association had attracted considerable support as well as publicity by efforts in the late sixties to bring about reforms in poor law care. Together with the *Lancet* and the Association for the Improvement of Workhouse Infirmaries, the Poor Law Medical Officers Association had been instrumental in securing passage of the Metropolitan Poor Relief Act of 1867.

Joseph Rogers, following a bitter personal struggle with the Guardians of the Strand Union, embarked upon a new program of strengthening the

[46] *Medical Press and Circular*, August 5, 1868, p. 125.

Association at the close of the sixties. Touring Ireland, he observed that the all-embracing program of medical relief there seemed to offer considerable improvement on the English system. Rogers also visited the principal cities of England and induced a number of cities to adopt legislation similar to the Metropolitan Act.[47]

Meanwhile, other supporters of reform of relief to the sick poor had joined in the fray. Dr. J. H. Stallard (M. D. Lond.) published a study of London pauperism, offering plans to revise the structure of poor law administration towards more efficient, central control. Dr. Thomas Hawkesley, Physician to the Infirmary for Consumption and Diseases of the Chest, spoke to the Association for the Prevention of Pauperism and Crime in London on the plague " constantly raging in our midst . . . more dangerous because overlooked in forms of poverty that from familiarity with them we come to view as inevitable . . ." [48] The medical journals maintained a repeated clamor in support of the poor law medical officers [49] and reports of poor law inspectors provided grist for reformers' mills.[50]

Demands in the Seventies for Reform. During this decade the Poor Law Medical Officers Association was to reach a new high in their calls both for improved working conditions for themselves as well as improvements in the quality of medical care for the poor.

By February of 1871 the Association had drawn up a nine-point reform program which was circulated in the leading medical journals.[51] Six of

[47] Rogers, *op. cit.*, p. xxi.

[48] Thomas Hawkesley, *Charities of London and Some Errors of Their Administration* (London: John Churchill & Sons, 1869), p. 19.

[49] See, in part, *M. Press and Circular*, 1868, *1*: 123-124, 378, 444, 249. Also *Lancet*, 1871, *1*: 60 and *Brit. M. J.*, 1869, *1*: 380; 1869, *2*: 539-540.

[50] See especially the *Ann. Rep. P. L. B. for 1870-1871*, Appendix, p. 188.

[51] 1. Permanency of poor law medical officer appointments and the entire payment of salaries out of the consolidated fund. 2. Adequate and uniform remuneration. 3. Increased salaries for length of service, and promotion to higher inspectorial appointments. 4. Consolidation of the various offices of registrar, vaccinator, medical officer, and medical officer of health, with fitting remuneration. 5. Drugs and surgical instruments to be provided by the Guardians, and dispensers and dispensaries to be established wherever practicable. 6. To obtain for the medical officers the responsible control of all midwifery cases. 7. The provision of a basis for consultation and united action in cases of difficulty. 8. Payment for surgery and midwifery in the workhouses as provided for in District work, and an extension of the list of operations for which extra fees were paid. 9. To raise the status of the poor law medical officer, to increase their influence and usefulness, and consequently their remuneration, and to provide a channel through which all the defects of the poor law medical service may be brought to light and "discussed with a view to their removal or amelioration." See *Brit. M. J.*, 1871, *1*: 134 and the *Lancet*, 1871, *1*: 175.

the points were aimed at improving the status of the poor law medical men, but three called for reform in medical care—namely establishment of additional dispensers and dispensaries, provision for consultation service and placing midwifery cases under the authority of the medical officers. Commenting on these demands with sound utilitarian sentiments, the *British Medical Journal* observed:

> All of us who have considered the question and the medical officers of the Poor-law service especially, have long since aimed at the conclusion that a very large amount of pauperism which weighs upon the resources of the nation, arises from sickness of preventable character; and that under a better organized system of Poor-law relief, and especially by attributing to the medical officers of the Poor-law preventive as well as curative functions, much of this pauperizing sickness would be prevented, and where it is unavoidable, it might be more promptly and effectively cured.[52]

The following February (1872), a deputation called hopefully upon James Stansfeld, the new President of the Local Government Board. The deputation was headed by Corrance and Rogers (representing the Association) and was also accompanied by Dr. Ernest Hart, voluble editor of the *British Medical Journal* and Chairman of the Poor Law Committee of the British Medical Association. They asked Stansfeld for a thorough overhauling and reorganization of the poor law medical service, appointment of more medical officers, payment of drugs from the rates instead of by poor law medical officers, a greater degree of independence for medical officers in their relations with Boards of Guardians, and, further, they urged that medical officers of health strengthen their enforcement of sanitary measures.[53] These were, on the whole, less self-interested demands —aimed at a more general reform than were the previous year's list. Stansfeld, following an old pattern, promised consideration of the matter, but no sweeping administrative changes followed.

Two years later, in 1874, the Association made another attempt, this time through passage of a resolution with only one aim—extension of dispensary facilities:

> That seeing that the greater portion of our annual outlay of £8,000,000 for poor relief is expended on the maintenance of the sick and on those dependent on them, and that the administration of medical relief in the provincial towns and rural districts of England and Wales is chaotic and based on no recognized principles, this meeting is of opinion that the system is most unsatisfactory and wholly and palpably inadequate to meet the necessities of the poorer classes. The Association trusts therefore that her Majesty's Government may see fit to introduce a measure

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[52] *Brit. M. J.*, 1871, *1*: 509.
[53] *Brit. M. J.*, 1872, *1*: 187-188.

in the present session of Parliament or as soon after as may be practicable, having for its object the reform of such system by the establishment of district dispensaries, as recommended in the Report of the Royal Sanitary Commission by those Poor-law inspectors who were specially deputed to institute inquiries, and which dispensaries have been found in Ireland to work so beneficially in diminishing sickness and mortality, and in curtailing poor relief expenditure.[54]

When this memorial was presented to the Local Government Board, a supplementary paragraph was appended, again requesting superannuation rights for poor law medical officers through compulsory Parliamentary legislation. But the response was slow. Dispensary building was underway in the metropolis, but rural Boards of Guardians needed more than a resolution to solve the problem.

Another mammoth push for reform came in February 1878 when, acting together with the *Lancet*, the Poor Law Medical Officers Association rounded up eight thousand signatures to a new, comprehensive memorial addressed to the Local Government Board. In good Benthamite language this document emphasized that the petitioners' "claim to a hearing must be understood to be based upon the strictly utilitarian and economizing view of the subject on which we speak." [55] Once again some of the old complaints were put forward: local poor law medical officers should be responsible to the Local Government Board [not the Guardians], better pay was needed, medical officers should not be responsible for the supply and dispensing of drugs. The "memorial" also urged that medical treatment of the poor should be separate from the workhouse, that medical officers should have direct control over the supply of "necessaries" ["medical extras"] for the sick poor, that paid nurses be available for home nursing, and that a departmental or legislative commission be appointed to investigate these matters.

The Local Government Board took a leisurely approach to the memorial. Six months after it had been received, John Lambert, the Board's Permanent Secretary, responded casually stating that the pressure of business had heretofore prevented consideration and he hoped, shortly, to be able to communicate the Board's views on this subject.[56] On November 13, 1878, the Board finally dispatched a formal reply to the memorial, stating coolly:

1. The proposal for greater responsibility of the Poor Law Medical Officer to

[54] *Lancet*, 1874, *1*: 528.
[55] L. G. B. Misc. Corres., No. 15574/78 of 1878, "*Lancet* Memorial."
[56] L. G. B. Misc. Corres., No. 52410/78, 20 August 1878. See also *Ann. Rep. L. G. B. for 1878-1879*, p. xliv.

the Local Government Board is at variance with the policy of Poor Law Amendment Act, 4 & 5 William IV, which left the main control in the hands of the Guardians.

2. From time to time, the Board attempts to improve the salaries of the Poor Law Medical Officer.

3. The Board cannot agree, especially in rural districts, to a separation of drugs and provision of dispensers.

4. The Board cannot see anything in the nature of medical relief which requires it to be regarded as a matter distinct from the Workhouse.

5. The Board feels that leaving the supply of necessaries to the Medical Officer instead of the Relieving Officer would 'unquestionably increase the expenditure for the relief of the sick poor and diminish the control of the Guardians.'

6. With reference to paid nurses, there was nothing to prevent the Guardians from providing such assistance.[87]

The reply concluded that the Board saw no grounds which necessitated further investigation.

Such a reply might have dashed the hopes of any reformers. Part of the Board's rigidity was undoubtedly due to the authoritarian personality of John Lambert, a man who tended to regard all change as suspect. But a deeper factor than Lambert's reactions, or the central acceptance of recalcitrance of Boards of Guardians motivated the reply: namely central assumption that final procedural responsibility rested with the local authorities.

Following this 1878 set-back an extended lull fell over efforts of the poor law medical officers to change central policy. Much of the Association's energies during the eighties and the early nineties were concentrated upon the defense of particular medical officers who fell afoul of their Boards of Guardians, as well as in efforts to obtain superannuation, the payment of medical witnesses, and improvements in salary scales.[88] The medical journals and files of the Board's correspondence do not record major petitions again being placed before the Board for a number of years. The annual meetings of the Association continued to discuss the familiar poor law medical problems, as did poor law district conferences which had been held annually since 1868. The district conferences, which had been founded by Mr. Barwick Baker in the West Midlands, aimed at an exchange of views of "men of practical experience in poor law

[87] L. G. B. Misc. Corres., No. 77841/78, 13 November 1878.

[88] The fight for superannuation was bitter. Permissive legislation in 1864 and 1867 had given Boards of Guardians the right to provide for superannuation of union officers. This discretional right had been rarely exercised by local Guardians and, after a lifetime of public service in the community, the parish doctor was usually retired without remuneration.

administration with regard to the measures adopted in particular districts and their results." [59] Discussions at both the district conferences and at annual central conferences of poor law authorities, which were convened from 1871 on, kept alive the many problems in treatment of the sick poor.

Poor Law Medical Reform in the Nineties

By the early nineties a variety of new agents were at work unearthing fresh evidence of drawbacks in the whole poor law system. Charles Booth's studies on *The Life and Labour of the People in London*, carried out with a team of early "research investigators," began to appear in 1892; Booth's *Aged Poor in England and Wales* emerged in 1894. Fabian researchers were active on the subject. The growth of the trade union movement had also brought into articulate being united forces living close to the lives of the destitute and acutely aware of their needs.

In 1888 a select committee of the House of Lords was appointed to investigate the powers held by the Guardians and their adequacy to cope with distress which might occur in London or other heavily populated cities. The Lords' investigation was not an exhaustive one, and it did not take testimony from local poor law medical officers or from the Association. Some of the gains in poor law medical care were pointed out by Sir Hugh Owen, Lambert's successor as Permanent Secretary to the Board—particularly the increase in numbers of whole-time medical superintendents of poor law infirmaries and the improved dispensary system in London. It was officially admitted, however, that the medical staff serving under the poor law had not been sufficiently increased to cope adequately with the medical needs of the poor.[60]

The report of the 1888 select committee, insofar as it related to medical relief of the poor, was quite favorable. It observed that because of the excellence of treatment in London poor law infirmaries there was even a tendency to "regard them as a kind of state hospital, entrance into which does not imply that the patient is a pauper." [61]

By the early nineties, the public and central government's attitude towards medical care to the poor had altered considerably, and in 1893 the Poor Law Medical Officers Association decided on another major push for further reforms. In March a deputation headed by the Association's

[59] Aschrott, *op. cit.*, p. 86.

[60] *Report of the Select Committee of the House of Lords on Poor Relief, 1888, Minutes of Evidence*, pp. 7 and 604.

[61] *Ibid.*, p. viii. The report also suggested increased reliance on provident dispensaries and medical benefit funds to cut down on the use of poor law medical facilities.

Council members called upon the president of the Local Government Board, Sir Walter Foster, and presented a list of reforms on which the Council felt the time had arrived for legislation. Five points were stressed: first, the advisability of extending the successful London dispensary system to all large towns throughout England and Wales. Second, the parish doctors urged again that the practice of forcing them to pay for medicines should be eliminated. Next came the old question of superannuation; fourth, a reminder of the insufficiency of pauper nursing, and finally the Board was reminded that no official provision had been made for the use of anesthetics in poor law work.[62] Although for the past thirty-five years anesthetics had been in general use in medical practice, the Association's delegates stated that in many unions "operations were performed where private patients would undoubtedly have anaesthetics, whereas the pauper had to suffer without them."[63]

The Association delegates were accorded a far more favorable reception in 1893 than they had had from John Lambert in 1878. Sir Walter Foster assured the group of his "strong sympathy" with respect to the extension of the infirmary system throughout the country, as far as it might be feasible. The encouragement of infirmary building was, he emphasized, the official policy of the Board. The Board had discouraged the system of making medical men buy drugs and would continue to do so. With respect to anesthetics, Sir Walter assured the delegation of his entire willingness to support the provision of anesthetics. The Board had already sent out a circular on the provision of trained nurses, and had discouraged pauper nursing insofar as possible. Sir Walter recommended further, with respect to superannuation, that the Association draw up a workable scheme.[64] Shortly after the March deputation, the Local Government Board issued an order for the provision of anesthetics in pauper treatment.

This was heartening news for the Association. The changed, cooperative attitude of the Board and the widened public humanitarianism to the poor were also evident in central orders permitting a weekly screw of tobacco for paupers in 1892 and later considerable improvements in the diet under a General Order of 1900.[65]

[62] The deputation told Sir Walter that paupers were entirely dependent upon "the goodwill and charity of their medical attendants for the administration of anaesthetics. If they had not anaesthetics in any case it was because it was out of the power of the medical man to provide them." *Lancet*, 1893, *1*: 489.

[63] L. G. B. Govt. Office Corres., 1893 (Vol. 127), No. 40904/93.

[64] *Lancet*, 1893, *1*: 490.

[65] Newsholme, *op. cit.*, p. 78.

The same humanitarian outlook was to inspire the appointment of a royal commission in 1895 to investigate the condition of the aged poor. At this time almost a third of the old people in England and Wales received poor relief. Neither the Royal Commission of 1895 nor a Select Committee on the Aging Deserving Poor three years later, however, made any major recommendations for improvement in the care of the aged sick poor. The Poor Law Medical Officers Association, however, in 1896 passed a resolution stating that ". . . the time has arrived when Boards of Guardians should take into their serious and earnest consideration the necessity of providing for the aged and infirm inmates of workhouses accommodation which will be more suitable to their infirmities and other requirements than now exists." [66]

This resolution had little or no effect within the next few years, however. An important step in improving the position of the poor law medical officer occurred in 1895, when Walter Long, former Parliamentary Secretary to the Local Government Board, introduced an Association-supported bill to provide superannuation allowance for poor law medical men. The bill was successful and the cause of many years of strife finally resolved. Although superannuation had been one of the major planks in the formation of the Association, the Council meeting in March 1897 unanimously resolved that the passing of the Poor Law Officers Superannuation Act " had by no means rendered the further existence of this society unnecessary." [67]

The Position by 1900

The years between 1870 and 1900 unquestionably had brought improvements in public care for the sick poor. New infirmaries, particularly in the large cities, stood as sizable evidence of loosened purse strings of formerly unwilling Guardians. Society had quite fully accepted Dr. Henry Rumsey's mid-century statement that " the simple refusal of medical relief, will neither cure their destitution nor prevent their improvidence." [68]

As the great Poor Law Commission of 1909 was to reveal a few years later, however, the defects of medical service to the poor were still manifold in 1900 and the Poor Law Medical Officers Association had been unable to bring about a major material betterment. Public opinion continued for many years to be tolerant of abuses in treatment. While some

[66] *Lancet*, 1896, *1*: 860.
[67] *Lancet*, 1897, *1*: 661.
[68] Rumsey, *op. cit.*, p. 255.

large cities by 1900 had established fairly advanced programs,[69] other areas were slack, even callous, in their administration of the program. Not all parish doctors were men of the stamp of Joseph Rogers. George Lansbury, indeed, in discussing the London poor law medical service had claimed that "workhouse doctors do neglect their duty." [70] The actual efficiency or inefficiency of the poor law medical officers is immeasurable. Those in the best position to testify, the sick poor, were historically voiceless.

Out of this changing pattern, however, there had clearly emerged a greater affirmation of the principle of curative treatment for all. Clearly recognizable were the stirrings of a new public attitude, characterized by Thomas Mackay: "The subject is now approaching a critical stage. There is a strong momentum bearing down on all opposition and leading to an almost gratuitous treatment of sickness." [71] Legislation in the first decade of the twentieth century was to make these words prophetic.

Insofar as he was able, the poor law medical officer had testified to the abuses of the system in which he worked, had at times been baffled by the spectacle of central acceptance but local deviation in the application of reforms, and had been supported by the new forces of social reform in the community. By 1900 he was still awaiting that sweeping investigation of the massive problem of poor relief—to come nine years hence—as a result of which England was to enter into a new age of social responsibility.

[69] The city of Liverpool, for example, at the end of the century had commenced the erection of a tuberculosis sanitorium for the poor.

[70] *Minutes of Evidence, Royal Commission on the Aged Poor*, Questions 14022, 14023.

[71] Thomas Mackay, *Public Relief of the Poor* (London: John Murray, 1901), p. 171.

THE INTRODUCTION OF LEMON JUICE AS A CURE FOR SCURVY

CHRISTOPHER LLOYD

Scurvy was the most malignant of all sea diseases in the days of sail. More men were killed by it than in any number of fleet actions, and it had a more paralysing effect on the conduct of war (particularly the American War) by immobilising whole fleets than is commonly supposed. Yet today it is a forgotten disease. Its conquest must therefore be regarded as the greatest single triumph on the part of that despised branch of the medical community in the eighteenth century—the naval surgeon.

Everyone knows that James Lind, chief physician of Haslar Hospital, Portsmouth, described a simple antidote in his *Treatise of the Scurvy* (1753), in which he demonstrated that orange and lemon (not lime) juice was the answer. Although this had been pointed out as early as 1593 by Sir Richard Hawkins, it had largely (though not entirely) been forgotten by the time fleets began to be built and manned on anything like a modern scale.[1] What has hitherto remained a mystery is why, after Lind had demonstrated a scientific answer to the problem by the first controlled dietetic experiment on record, nearly half a century elapsed before it was officially introduced into the Royal Navy, by which time thousands of men had died because of a deficiency in their diet. As Hirsch says,[2] " the subsequent story of how his work was received is one of the most foolish episodes in the whole history of medical science or practice." Herbert Spencer used the instance as the most flagrant example of administrative apathy on record, while Sir Humphrey Rolleston and Dr. Meiklejohn have regarded it as yet another example of the prejudice which greets the innovator.[3] Yet, whereas Jenner's work was known and honoured within a few years of publicaton, Lind was forgotten and his views ignored.

[1] *See* J. Keevil, *Medicine and the Navy, 1200-1900*, Edinburgh, London: Livingstone, vol. I, 1957, pp. 101, 220. The present article is based on chapters written by the present author and Surgeon Captain J. L. S. Coulter, R. N., in their continuation of the third volume of this work.

[2] August Hirsch, *Handbook of Geographical and Historical Pathology*, London: New Sydenham Society, 1883, vol. II, p. 514.

[3] Herbert Spencer, *Study of Sociology*, 1880, p. 159; Sir H. D. Rolleston, *J. Royal Naval M. Service*, 1915, *1*; A. P. Meiklejohn, " The curious obscurity of Dr. James Lind," *J. Hist. Med. & Allied Sc.*, 1954, *9*: 304.

In the popular imagination, the voyages of Captain Cook between 1768 and 1780 are regarded as demonstrating the conquest of scurvy, so that Cook has been given the credit which rightly belongs to Lind. Certainly the regime established by Cook kept his men remarkably free from scurvy (although there were numerous cases of its incidence), but it is the object of this article to show that, far from hastening the cure for the disease, Cook inadvertently delayed it, because of the false deductions drawn from the incomplete medical reports on his voyages.

Lind's attention had been drawn to the subject by the appalling casualties suffered on Anson's voyage round the world in 1740-44. On that voyage 1051 men died out of the 1955 who sailed from England, most of them from scurvy. Lind carried out his famous experiment on board H. M. S. *Salisbury* in the English Channel in 1746-47 and published his findings in his treatise in 1753: "the result of all my experiments was that oranges and lemons were the most effectual remedies for the distemper at sea." [4] He stipulated the necessity of a vegetable diet as a preventative, and he recommended other antiscorbutics as well—spruce beer, onions, salted beans, bottled gooseberries, pickled cabbage, salads etc.; but he claimed that not one of these was as effective a cure as citrus fruit. He destroyed not only current theories of bad air as the principal etiological agent, but the pretentions of remedies hitherto advanced on the highest authority, such as vinegar, elixir of vitriol, tar water, etc. The only mistake he made was in his direction for the preparation of the "rob" (as the concentrated juice was called), to boil the juice for several hours before bottling it.

"The province has been mine to deliver precepts; the power is in others to execute," he sadly remarks in another place.[5] His cure may not have been as efficacious as the use of blackcurrant or rose-hip juice, which is now known to have a much higher ascorbic acid content than lemon juice; but at the time it was a cheap and simple remedy. Why, therefore, was it not officially adopted in the Royal Navy until 1795, and not in the merchant marine until 1844?

One of the answers was that his treatise was only one of a score of others on the same subject, and that his unfashionable pursuit of naval medicine (though he became the head of the largest naval hospital in the world) meant that the authorities did not take him as seriously as they

[4] James Lind, *Treatise of the Scurvy*, eds. C. P. Stewart and D. Guthrie, Edinburgh: Univ. Press, 1953, p. 125.

[5] Idem, *Essay on the Most Effectual Means of Preserving the Health of Seamen . . .*, London: Millar, 1757, p. 154.

would have done had he been a Fellow of the Royal Society, or even of the College of Physicians. A more definite reason, however, was that false deductions made from Cook's voyages a few years after the publication of Lind's book obscured its teaching. For this Captain Cook was not entirely to blame, since he was primarily a navigator and an explorer, not a dietician. He never had the opportunity on his long and arduous voyages to study scientifically any one of the numerous remedies which he carried on board, nor was he sufficiently long out of sight of land or supplies for a thorough proof of the efficacy of his methods. By forcing (even flogging) his men to eat what the authorities considered best for them, by maintaining unusually high standards of hygiene on board his little ships, and by using that common sense with which he was so literally endowed to obtain as much fresh water and vegetables as he could, he kept the scurvy at bay; but it was nature, not the captain or his surgeons, which cured the cases which occurred.

Moreover, Cook was a privileged commander. His ships were small and stout; his men were picked; and they were better victualled than on any comparable voyage. How different from the huge, overcrowded line-of-battle ships which had to cruise in all sorts of weather for months at a time, manned by undernourished wretches impressed from the slums of the great ports! To guide him on questions of diet, Cook had the advice of the surgeon who had just returned from Wallis' circumnavigation of the globe, and whose notes are bound up in one copy of his journal. Unfortunately this surgeon, John Hutchinson, had nothing to say about fruit juice.[6] One of the articles of diet which he recommended was 'portable soup,' i. e. slabs of preserved meat juice seasoned with herbs, which had been invented by a French woman living in England about ten years previously. Dissolved and diluted in water, these 'cubes,' as we might call them, proved an invaluable addition to the seamen's salt diet, as did sauerkraut or pickled cabbage (the favourite vegetable of George III). Cook was provided with 7,860 lbs of the latter and an ample, though unspecified, amount of the former. But the "rob of lemon" was only carried in small quantities as a necessary for the sick.

The most notable addition to his stores were 40 bushels of malt in hogsheads. The reason for this is that the victualling authorities had just been impressed by a book entitled, *An Historical Account of a New Method of Treating the Scurvy at Sea; containing ten cases which show*

[6] J. C. Beaglehole (ed.), *Journals of Captain Cook*, Cambridge (Hakluyt Society): Univ. Press, 1955, vol. I, pp. ccii, 632.

that this destructive disease may be easily and effectually cured without the aid of fresh vegetable Diet. David MacBride (1726-78), the author of this pamphlet first issued in 1764 and re-issued the year Cook sailed, sought to show that " wort, or infusion of malt, as a substitute for fresh vegetables in the cure of scurvy " was the answer to the problem. He enlisted the support of eminent medical men, among whom were Sir John Pringle, surgeon-in-chief of the Army, and John Hunter, the distinguished anatomist, and persuaded the Admiralty to make trial of the wort in the naval hospitals. This, however, resulted in such a " murmur " at the entire cessation of vegetables that the patients " imposed on the persons who had the superintendance of the sick (chief of whom was Lind!) and made them believe and represent to the Board that the wort produced very bad effects." Undeterred, MacBride obtained a second trial at sea in a ship commanded by his brother, on the strength of whose testimony the wort was issued the *Endeavor,* the Secretary of the Admiralty informing her captain that " there being great reason to believe from what Dr. MacBride has recommended in his book *Experimental Essays* on the scurvy etc., copies of which are enclosed, that malt made into wort may be of great benefit to seamen in scorbutic and other putrid diseases, experiments with it are to be made in the present intended voyage." [7]

By the time the ship reached Tahiti via Cape Horn Cook was well pleased with the regime he and his surgeons, Monkhouse and Perry, had established on board. He attributed the good health of his crew chiefly to sauerkraut, portable soup, and malt, the latter being given to every man who showed any symptoms of scurvy. Yet that same year a surgeon in the East India Company named John Clark, having made the same use of malt because he was captivated by MacBride's theory, " had the mortification of observing the distemper to increase daily," until he arrested it by dosing his patients with lemon juice, as advised by Lind, to whom he pays a generous tribute.[8] And had an entry in the journal of Sir Joseph Banks, Cook's most distinguished passenger, been published at the time, the history of the disease might have been very different; it was not, however, printed until 1896. Banks writes:

> The ship was supplied by the Admiralty with sourcrout, of which I eat constantly till our salted cabbage was opened, which I preferred; as a pleasant substitute, wort was served out almost constantly, and of this I drank a pint or more every evening, but all this did not check the distemper so entirely as to prevent my

[7] Beaglehole, *op. cit.,* vol. I, p. 624.

[8] John Clark, *Observations on the Diseases of Hot Climates,* London: Wilson and Nicol, 1773, p. 422.

feeling some small effect of it. About a fortnight ago my gums swelled, and some small pimples rose on the inside of my mouth, which threatened to become ulcers; I then flew to the lemon juice, which had been put up for me according to Dr. Hulme's method, described in his book. . . . Every kind of liquour which I used was made sour with lemon juice, so that I took nearly 6 oz. a day of it; the effect of this was surprising; in less than a week my gums became as firm as ever, and at this time I am troubled with nothing but a few pimples on my face, which have not deterred me from leaving off the juice entirely.[9]

Dr. Nathaniel Hulme (1732-1807), once a surgeon's mate, had written a thesis at Edinburgh the same year that Cook sailed.[10] He was a disciple of Lind and at this date an ardent enthusiast for the use of lemon juice mixed with the grog issued daily at sea. It is significant of the fate which overtook this specific that when, ten years later, he recommended a panacea which would cure such disparate diseases as the stone, the gout, and the scurvy, he makes no mention of citrus fruit, confining himself to a recommendation of a vegetable diet in general.[11]

The surgeon's report on the voyage of the Endeavour was written by William Perry, the senior surgeon having died of dysentery. After saying that all the antiscorbutics were useful, he concludes "It is impossible for me to say what was most conducive to our preservation from scurvy, so many being the preventatives used; but from what I have seen the wort perform, from its mode of operation, from Dr. MacBride's reasoning, I shall not hesitate a moment to declare my opinion, viz. that the malt is the best medicine I know, the inspissated orange and lemon juice not even excepted."[12] The flaw in his reasoning cannot fail to strike the attentive reader.

The same thing happened after the second voyage (1772-75). Cook preserved the health of his men by insisting on their obtaining fresh water and vegetables at every opportunity, but no genuine experiments were made with any particular remedy for scurvy. Only 24 pints of rob of lemon were carried, the preference again being for antiquated remedies such as elixir of vitriol and Dr. James' powder, the eighteenth century equivalent of aspirin. Reporting on the medical aspect of the voyage after it was over, Cook relied on the advice of his surgeons, James Patten and William Anderson. The wort, Cook wrote, "is without doubt one

[9] Joseph Banks, *Journal*, ed. Hooker, London, New York: Macmillan, 1896, p. 74.

[10] Nathaniel Hulme, *Libellus de Natura Scorbuti, with a proposal for preventing the Scurvy in the British Navy*, London: Cadell, 1768.

[11] Idem, *Safe and Easy Remedy for the Relief of the Stone and Gravel, the Scurvy, Gout etc.*, London: Robinson, 1778.

[12] Beaglehole, *op. cit.*, vol. I, p. 632.

of the best antiscorbutic sea medicines yet discovered, and if used in time . . . will prevent the scurvy from making any great progress for a considerable while. But I am not altogether of opinion that it will cure it at sea. We have been a long time without any, without feeling the want of it, which might be owing to other articles," [13] a considered judgment typical of his careful mind. Patten, however, states roundly that malt is " the best remedy hitherto found out for the cure of the sea scurvy; and I am well convinced, from what I have seen the wort perform, that if aided by portable soup, sauerkraut, sugar, sago and currants, the scurvy will seldom or never make its alarming presence among a ship's company on the longest voyage." [14]

It was on this report that the Admiralty was to depend for the next twenty years, especially after Cook had told Pringle (now President of the Royal Society, which presented the captain with its highest award for the preservation of health at sea) that " I entirely agree with you that the dearness of the rob of lemon and oranges will hinder them from being furnished in large quantities. But I do not think this so necessary; for though they may assist other things, I have no great opinion of them alone." [15] This unfortunate letter, dated Plymouth 7th July, 1776, was evidently written when Cook was in a hurry to embark on his last voyage, during the course of which both he and his surgeon, Anderson, died.

So successful were the dietary and hygienic regulations previously adopted that it was only necessary to maintain them during Cook's third voyage to prevent any major incidence of scurvy. Neither fruit juice nor malt was ever given a fair trial, so that it was on the evidence of the second voyage that the Victualling Board faced the problems presented by the War of American Independence, now entering its acute phase. Anyone who suggested that Lind's advice was preferable to MacBride's was promptly silenced. Thus when, to quote one from many examples in the correspondence of the Board, a surgeon expressed his opinion that lemon juice was a sovereign cure, the reply he received was that " this remedy is not new; trials have been made of the acid of lemon on board several ships which made voyages round the globe, the surgeons of which all agree in saying the rob of lemons and oranges was of no service." [16]

[13] *Ibid.*, vol. II, 1961, pp. 910, 927.

[14] *Ibid.*, p. 954.

[15] A. Kippis, *The Life of Captain James Cook*, London: Nicol and Robinson, 1788, chap. V. Cf. Lind's *Treatise*, ed. Guthrie, p. 398.

[16] Correspondence of Sick and Hurt Board, March 28th, 1786.

Individual surgeons such as Sir Gilbert Blane,[17] or Frederick Thomson,[18] could and did prescribe lemon juice on their own account, but there was no official issue. Hence, contrary to general belief, and however striking his achievements in other directions, it may be said that Cook's voyages delayed rather than hastened the introduction of the best available cure for scurvy.

The cost in lives during the subsequent war was indeed terrible, and, as far as the Channel Fleet was concerned, the incidence of scurvy on a wide scale must be regarded as an important factor in Britain's lack of success in the prosecution of that war. In August 1780 one seventh of the fleet, amounting to 2,400 cases, were landed for treatment after a ten weeks' cruise. In 1781 the Commander-in-chief wrote "the scurvy is making strong strides, so that we cannot keep the sea." [19] In the West Indies, where indeed fruit was easily obtainable, Blane gives the following illustration of its incidence during five months in 1781: [20]

Disease.	*Sick on Board.*	*In Hospital.*	*Died.*
Fever.	663	73	62
Flux.	1,028	219	60
Scurvy.	1,844	1,033	89
Total.	3,535	1,325	211

Blane, who became by somewhat irregular means the chief physician in Rodney's fleet in the West Indies, soon took matters in hand by following Lind's advice. He pointed out to the Admiralty that "every fifty lemons might be considered as a hand to the fleet," [21] but he could make no improvement in the stores issued beyond what he himself purchased locally. Nor was he at first convinced that lemon juice was the complete answer, though by the time his third edition was printed in 1799 he could say that the juice works "like what is vulgarly called a charm."

Blane's opportunity came in 1793 when his friend Admiral Sir Alan Gardner, a member of the Board of Admiralty, asked his advice when nominated to the command of the East Indies Station. Blane had noted that the first fleet to be supplied with lemon juice was that under Admiral

[17] Gilbert Blane, *Short Account of the Most Effectual Means of Preserving the Health of Seamen*, 1780.

[18] Frederick Thomson, *Essay on the Scurvy*, London: Robinson, 1790.

[19] *Sandwich Papers*, eds. Barnes and Owen, London: Navy Records Society, 1932, vol. III, p. 292; vol. IV, pp. 40, 47.

[20] Blane, *Observations on the Diseases of Seamen*, London: Cooper, 1789, p. 46.

[21] Correspondence of Sick and Hurt Board, Dec. 18, 1781.

Watson in India in 1757, on the suggestion of Surgeon Ives, an admirer of Lind.[22] He therefore recommended an ample supply, and Admiral Rainier (who replaced Gardner at the last moment) was able to make a continuous voyage of 19 weeks without a single case of scurvy on board. This remarkable demonstration of the efficacy of Lind's methods enabled Blane, now a Commissioner of the Sick and Hurt Board, to persuade the Admiralty in 1795 to sanction a daily issue of ¾ oz. of lemon and 2 oz. sugar mixed in a man's grog. Soon afterwards, the outbreak of war with Spain forced the authorities to restrict the issue, but by 1803 the annual naval consumption of lemon juice was 40,000 gallons, and we find Nelson, on the advice of his physician, contracting for 20,000 gallons in addition to the 30,000 allowed to the Mediterranean fleet in 1805, because he could purchase Sicilian lemons cheaply.[23]

The credit for the original issue in 1795 is not entirely Blane's. What in fact occurred was that the juice was issued on demand to various fleets during the course of the year, and that a great deal of the credit must go to Dr. Thomas Trotter, Physician of the Channel Fleet. As the author of *Observations on Scurvy* (1786), he, like Blane, was a disciple of Lind, though both of them realised the mistake in heating the juice for the purposes of preservation. The antiscorbutics issued—sauerkraut, elixir of vitriol, and malt—were, in Trotter's opinion, useless, and he proceeds to demolish the curative claims of each in turn. As for the wort of malt, "I have not seen it attended with any good effects," whereas "fresh, essential vegetables of all kinds will cure it, and those fruits abounding with an acid, such as the citric class, are more effectual than others."[24]

In Trotter's *Medicina Nautica*, which is virtually a magazine devoted to naval medicine, we may trace the good effects of his advice between 1795 and 1800. Between March and June 1795, 3,000 cases were thus cured on board.[25] That summer the Admiralty, on his advice, directed the Victualling Board to supply all the big blockading fleets,[26] and though there were set backs due to bad weather delaying the victuallers, Trotter could declare in 1796 "that scurvy can always be prevented by fresh

[22] Blane, *Select Dissertations on Several Subjects of Medical Science*, London: Underwood, 1822, p. 69; E. Ives, *Voyage from England to India*, London: Dilly, 1773.

[23] Correspondence of Sick and Hurt Board, May 16, Sept. 22, 1803; Horatio Nelson, *Letters and Despatches*, London: Colburn, 1845-46, vol. V, pp. 226, 294, 320; Agent Victualler's purchases are in Wellcome Nelson MSS., vol. XI.

[24] Thomas Trotter, *Observations on Scurvy*, Edinburgh: Elliot and Robinson, 1786, pp. 215, 223.

[25] *Idem.*, *Medicina Nautica*, vol. I, London: Cadell, jun. and Davies, 1797, pp. 134, 415.

[26] Correspondence of Sick and Hurt Board, Aug. 12, 27, 1795.

vegetables and cured effectually by the lemons or preserved juice of the fruit . . . Whatever may be the theory of the sea scurvy, we contend that recent vegetable matter imparts a *something* to the body which fortifies it against the disease." [27] It was over a century before that something was defined as vitamin C.

From the year 1796, therefore, scurvy has played little part in medical history. Truth had ultimately prevailed, after fatal and obscurantist delays. But even then mistakes continued to be made. In 1797 the Admiralty distributed a noxious tract on scurvy written by a certain David Paterson in 1795: *A Treatise on the Scurvy, containing a new, easy and effectual method of curing that disease*, the remedy being nitre and vinegar without the use of " lemons, limes or any recent vegetable matter." Again, when Trotter in 1800 advised the preparation of lemon crystals instead of concentrated juice, he was told that it was too expensive.[28] Yet, curiously enough, this mode of preparation seems to have been used at a much earlier date, before the issue of the juice became common. We read in the newspaper *Post Boy* of Sept. 4th, 1701, that " before the Fleet sailed several Chests of Mr. Stringer's Elixir Febrifugium, and Salt of Lymons, were delivered at the Navy Office, pursuant to the Order of the Admiralty, for curing Seamen and Soldiers of Feavers, Clentures, Scurvey etc., and the quantitie of Lymons he has lately bought has rais'd Lymons above £4 per Chest at Billingsgate." However, Blane and Trotter and other surgeons had, by the end of the century, established the value of lemon juice, so that in Turnbull's *Naval Surgeon* of 1806 it is acknowledged to be " a certain specific." Had they not done so, the fleets commanded by Nelson would never have been able to keep the sea as long as they did.

It is entirely in accordance with the official record in this matter that limes soon replaced lemons, in spite of their inferior antiscorbutic property, (which was not, of course, realised at the time). The West Indian lime (c. *medica acida*) was cheaper and easier to obtain than the Mediterranean lemon (c. *limonum*). Thus it was that East Indiamen became known as *limejuicers*, and the Englishman is still known to Americans as a *limey*. But what Lind, Blane, Trotter, and all eighteenth century writers up to about 1790 had been recommending was lemon or orange, not lime juice. It is no part of our task here to describe the occasionally fatal consequences of this shortsighted economy, nor to consider the enormous losses it would have occasioned had there been wars on a big scale in the nineteenth

[27] *Medicina Nautica*, vol. I, p. 423.

[28] *Ibid.*, vol. III, pp. 76, 399; Correspondence of Sick and Hurt Board, July 14, Aug. 7, 1800.

century, or had canned vegetable not been invented.[89] Even if it took the Admiralty nearly half a century to learn their lesson, it took the merchant shipping authorities twice the time. The issue of lime juice (not lemon juice) was made obligatory by an act in 1844, but to such an extent was it adulterated by the owners that the regulations had to be tightened up by the Merchant Shipping Act of 1867, which appointed an Inspector of Lime Juice at bonded warehouses.

Seamen have always been a neglected class of the community, and in the matter of preserving them against the oldest and most loathsome scourge of the sea by the provision of a suitable diet, even when food could only be preserved by salt, the record is one of apathy and ignorance. Only comparatively recently has the truth of Sir Gilbert Blane's advice been appreciated by officialdom: "More may be done towards the preservation of the health and lives of seamen than is commonly imagined, and it is a matter not only of humanity and duty, but of interest and policy."[90]

[89] Henderson Smith, *J. Royal Army M. Corps*, 1919, and *J. Royal Naval M. Service*, 1919.

[90] *Observations on the Diseases of Seamen*, p. 184.

THE "MOST REMARKABLE" JOURNAL OF ERASTUS ROOT

JOHN W. KING

Several years ago, in the course of working on the early history of medical education in Vermont, I became acquainted with an interesting manuscript diary (1) which had been deposited in the Wilbur Library of the University of Vermont. "A Journal of / the most remarkable / Procedings, Studies / & Observations. / Kept / By Erastus Root." proved to be an excellent primary source for much of the material presented in the paper that was published at that time. (2) Because the diary is such an interesting document and is relatively unavailable, it seems appropriate to describe it in some detail.

The book itself is a small volume covered in imitation leather; it contains seventy-two pages four by seven and one-half inches. It is in fair condition. There is some cracking of the finish of the cover and considerable foxing of the edges of the pages. The ink has faded a little, but the text is still quite legible. The title page (Fig. 1) bears the rather lengthy title given above. Immediately below this is a group of three Latin maxims. The date given at the bottom of the page is: "1t October A. D. 1815 / & 40th of the Independence / of the U. S. A." The entries range from October 10, 1815, to February 10, 1816, with several interruptions. There is an autobiographical note in the fly-leaf of the diary and a summary of its author's activities at the end of the dated entries.

Erastus Root (1789-1829) was an obscure New England physician who died at a relatively early age and who, if he had not kept a diary, would hardly have been a proper subject for study more than a century later. Like other rural physicians of his day, he practiced medicine under nearly frontier conditions. The pre-Revolutionary era of complete dependence upon the British Isles for professional education had passed, but in the forty years of its independence, America had not developed educational facilities at home to the point where significant numbers of physicians could receive academic training. Medical education still depended largely upon the preceptorship system. Nathan Smith, (3) Ephraim McDowell, and Daniel Drake, to name a few of the more famous medical personages of the time, began their training through preceptors. In the seaboard towns many practitioners attended the few medical colleges available, and there was still a trickle of students to the European universities, but even

A Journal of
the most remarkable
Proceedings, Studies
& Observations.
Kept
By Eustis Root.

"Tempus est breve, et brevis hominum (vita,
dum memoria artium thesauros"
"Virtus auro est melius, et mors
finis miseriae."
"Sed fugit, interea, fugit irreparabile tempus."

1st October A.D. 1815
& 40th of the Independence
of the U.S.A.

Fig. 1. Title page of the diary.

in the larger cities, medical education for all except a fortunate few could only be described as sketchy. (4, 5)

In *The Pioneers*, James Fenimore Cooper described the prototype of the rustic medical student in the person of Dr. Elnathan Todd, who owed his career to his ability to swallow pills and to his sickly constitution. Dr. Todd was apprenticed for a year to an older physician and then "rode with the old doctor another year." After a visit of a few weeks in the nearest large city, Boston, he returned home with his medical gear and was ready to practice his profession. (6)

The aspiring student lived in the doctor's home, either as an indentured servant or, more commonly, as one of the family. He accompanied the physician on his rounds and acted as clinical clerk, apothecary, and groom. In his spare time, he read from the physician's meager library and sometimes dissected a clandestinely obtained cadaver in the woodshed. A few prospective physicians supplemented this experience by attending a lecture course at a nearby medical college. Usually students found that attendance at such programs did not interfere with their means of earning a living. Indeed, many medical students taught school and attended their medical courses simultaneously. (7) Waite (8) reported that only 335 degrees in medicine had been granted to 312 candidates in the entire country prior to 1800. Many of these were honorary or *ad eundem* degrees, so that even these numbers do not represent academically trained physicians.

If the education of a physician in the early nineteenth century was sketchy, his facilities were even more so. Root noted in his only published paper (9) that he used an infusion of red cabbage as a pH indicator; all of his other reagents were similarly homespun. Waite reported the personal effects of a Dr. Gideon Case of Hudson, Ohio, who died in 1822. Doctor Case's library consisted of 21 volumes with a value of $32.25. His instruments were valued at $17.33, and his medicine at $18.66. The most expensive part of his professional equipment consisted of his horses, cutter, and harness, which were valued at $225.00. (10)

Actually, very little is known about Doctor Root's life, although the brief, apparently autobiographical note on the flyleaf of the diary, coupled with the other scraps of knowledge about him obtained elsewhere, (11, 12) gives us a fair picture of the man. The following biographical notes are taken from the sketch in the diary except as otherwise noted. Doctor Root was born in Guilford, Vermont, on January 9, 1789. He was the youngest of three children. His mother was Patience Root, who was the second wife of his father, Timothy. He was influenced toward medicine by his aversion to farming, and his interest in science and in surgery

was stimulated by the amputation of one of his fingers at the age of eleven. In his childhood, a tumor developed on his finger. When it failed to disappear after attempts were made to cure it by rubbing it with the hand of a person dead of consumption, amputation was performed. The surgical procedure was carried out by a Doctor Ames of Brattleboro and apparently proved to be more interesting than painful to the young patient.

When the boy was eighteen years old, he was sent to Brattleboro to study with the Rev. Jason Chamberlin, and in 1807 he accompanied Chamberlin to Burlington when the latter accepted the post of Professor of Learned Languages at the University of Vermont. Root completed his work at the University of Vermont in the class of 1811. This was the last class to be graduated before the college was closed as a consequence of the War of 1812. Dartmouth College records indicate that the Vermont degree, an A. B., was granted in 1814, and that Root purchased an A. M. degree at some later date. (13)

The diary is not clear about the dates, but sometime between 1807 and 1815, he spent seventeen months studying medicine with the Doctor Ames who had amputated his finger. Apparently, it was during this period that Root also began his studies on the water from the Guilford Spring. In addition to all of these activities, he taught school during the winters from 1807 to 1815.

In 1815, his father, Timothy, decided to divide his estate among his children; Erastus's share was $1,200. Timothy apparently anticipated his demise prematurely, for he lived 28 years more, dying at the age of 101 years, 4 months, and 15 days. (11) Erastus's patrimony made it possible for him to return to Burlington to further his medical education by studying under Doctor Ames' friend, John Pomeroy. Doctor Pomeroy was on the faculty of the University of Vermont, but his teaching at that time consisted of private instruction to his own students. (2, 14, 15, 16)

The diary was begun on October 10, 1815, when Root was preparing to leave Brattleboro to study medicine in Burlington. It continued until February, 1816, just before he left Burlington to go to Hanover, New Hampshire, to take the full course of lectures in medicine at Dartmouth College. It is interesting to speculate upon what motives prompted Root to begin the daily record of his activities, and why he stopped so abruptly. There is always the tantalizing possibility that this is only one of several diaries and that others may have been written during other parts of his active life.

The introduction of this volume describes Root's early life, his reasons for going into medicine, and his father's decision to divide his estate,

thus giving Root enough money to attend medical school. On October 10, 1815, he left Brattleboro by sled at 3 a. m. and, after stopping overnight, arrived at Burlington the next day at 8 p. m. The distance was 140 miles, and considering the state of the roads and the mode of travel, this appears to be good time. He found lodgings in town and prepared to make his stay in Burlington as comfortable as possible. He knew many people in the town from his college days and apparently had made plans to enjoy his time there. Burlington, at that time a bustling lumber town of about 1,000 people, had almost recovered from the effects of the War of 1812, and, no doubt, seemed quite a metropolis to a young man from the older, quieter farming communities of southern Vermont. He visited friends the first evening, and it was not until the next day that he went to see Doctor Pomeroy, who unfortunately was out of town. Doctor Atwater showed him around and offered him a room at the school. Root was pleased with Doctor Atwater's pleasant manner but politely refused the room and almost regretfully took leave of Doctor Atwater in order to meet other old school friends. He did not meet his preceptor until October 16, and wrote: "I was much impressed by this remarkable man."

Lectures started the following day. Probably there was a set course in lectures, which each new student fitted into as best he could. Lectures were frequently tailored to fit the clinical material available for demonstrations. In his diary, Root described the procedures for the reduction of a fractured thigh and for the amputation of a leg—it took three minutes for Pomeroy to do this latter operation. He heard lectures on the analysis, physiology, and pathology of blood, and on methods of treatment. The texts studied included Buchan's *Domestic Medicine* and Dobson's *Edinburgh System of Anatomy*.

Unfortunately, this period of training was terminated rather abruptly by an opportunity for young Root to go to Grand Isle to teach. Grand Isle is a small village on the island of South Hero in Lake Champlain, about 20 miles north of Burlington. This offer had definite financial advantages, and Root spent three months at Grand Isle. While there, he encountered an interesting case of a child with buckshot in her trachea. Failure to treat the child successfully caused the local physician to send Root to Burlington to seek Doctor Pomeroy's advice. They were told to hang the child by the ankles and to press on her trachea; if this failed, "bronchostomy" was to be tried. The ankle-hanging trick failed to work, but the following day the child coughed up the shot, thus eliminating the need for more radical measures. About this time, Root contracted a cough, and going to the local physician, was given a prescription for a

tonic of calomel, gr. xv, with antimonical wine, and a brunonian pill! The treatment appeared to be worse than the disease, for he comments the next day that " The calomel operated powerfully, then took pill Pr. and rested comfortably thro the night," and two days later, " Very pleasant for new years, but being very weak from the operation of medicine I cannot enjoy it so well as if I were in good health."

On February 10, 1816, the last entry made at Grand Isle appears, and after a trip to Plattsburg, Root returned to Burlington for another six weeks' training. When this was completed, he returned to Brattleboro to visit before going to Dartmouth College for the medical lectures there. The Vermont section stops here, but the diary continues to record a trip by stage to Boston and on the brig Minewa to Savannah, Georgia, September 26 to October 13, 1818, and ends with a description of that city.

Root was licensed by the Second Medical Society and presented a dissertation at the meeting in January, 1817. The title of this really excellent paper was, " An Inaugural Dissertation on the Chemical and Medicinal Properties of the Mineral Springs in Guilford." In 1817 it was printed as a 15-page pamphlet by Simon Ide of Brattleboro, (9) and it was reprinted many years later to advertise the spring when an attempt was made to commercialize it. (17)

The story of the spring is an interesting one. The spring is described by Hemenway, who used Root's paper for much of her information. (11) It was " located on the farm of Major Edward Houghton, nearly a mile west of the Congregational meeting-house, a few rods south of the road that leads to the Baptist meeting-house." This was about seven miles from the town of Brattleboro. (1)

Jarvis Root of Brattleboro, a nephew of Doctor Root, discusses the history of the spring in " An Old Resident's Testimony." In his youth he knew the spring as the Guilford Pool. People from Massachusetts and New Hampshire, as well as from Vermont, were drawn to the spring by its great reputation. As a boy, he made frequent trips to the spring to carry water for the invalids who stopped at his father's house, there being no tavern, inn, or other public place near the water. Jarvis Root's grandfather—the Timothy Root who was the father of Erastus—when about 87 years of age was afflicted with the " scrofula," which badly affected his limbs, and involved his entire scalp. He began using the water from the Guilford Spring, drinking it and bathing himself freely in it, and a perfect cure was effected. His hair, which had fallen out, grew in again black but gradually turned white again after two years. After this episode, he lived a vigorous, healthy age and died when he was 101 years

old, "having no disease, but expiring from the decay of nature alone." (11, 12, 17)

The spring continued to be used locally for a number of years, but in about 1868 a Mr. James Dalton of Boston bottled the water and sent it to Boston. In an attempt to increase the flow of water, blasting was tried; the entire water supply was lost. (11)

Erastus Root's analysis of the water from the Guilford Spring, as described in his dissertation, reads like a storybook. Methods of qualitative analysis are crude enough today but, fortunately, we are beyond the stage of using nutgalls, blue cabbage, and green tea as diagnostic reagents. Experiments carried out by Root, apparently while he worked with Doctor Ames, showed the water of the spring to be acid—an infusion of blue cabbage was changed to red. Boiling the water removed the acidic property and the blue cabbage infusion was not changed by boiled water. This was accepted to mean that the acid was volatile. The acid produced a white precipitate with lime water. This precipitate effervesced with muriatic acid, which was interpreted to mean that the acid was carbonic acid. A strong infusion of green tea became purple and grew darker on standing, while tincture of nutgalls produced an immediate black color. These reactions were interpreted to suggest the presence of iron, which was held in solution by carbonic acid. Boiled water failed to show the color reaction with tea and nutgalls, presumably because the iron was precipitated as the carbon dioxide was driven off by boiling. Calcium was eliminated as a constituent by the absence of a precipitate after the addition of sulfuric acid to the water. "Sulphurated hydrogen" was eliminated by adding acetate of lead and looking for a precipitate, which failed to develop. Mercuric nitrate produced a precipitate with the water, suggesting the presence of muriatic acid. This was confirmed with nitrate of silver. Root's conclusions, that the spring contained carbonic acid, carbonate of iron, carbonate of alumina, and muriatic acid, probably combined with soda, were amply confirmed by the more sophisticated analysis reported by Doctor Jackson, state chemist for the Commonwealth of Massachusetts, 40 years later. (17)

Mrs. Charlotte Ford Morrison, (13) Alumni Recorder at Dartmouth College, reports that their records show that Erastus moved to Boston soon after receiving his Dartmouth M. D. degree. Miss Marguerite C. Evans (12) of Guilford notes from local records that Erastus married Lucinda Jacobs on February 1, 1821. Lucinda died after the Roots had been in Boston for eighteen months. As Erastus's mother had died during the previous year, he had few ties to hold him in New England. He

made a tour of the South and subsequently is believed to have settled in Savannah, Georgia, where Mrs. Lilla M. Hawes (18) of the Georgia Historical Society has failed to find any record of him, so the trail ends there. It is known that he died in 1829. (11) No descendants of the Root family remain in Guilford or in Brattleboro.

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PRE-VESALIAN ANATOMY IN THE LIGHT OF MODERN RESEARCH *

GERNOT RATH

The classic biography of Vesalius, published in 1892 by the Basle pathologist Moritz Roth,[1] seemed to have given final form to the picture of Vesalius and of the anatomy of the sixteenth century. Roth's undisputed theses—based on sound knowledge of the original sources—were that Vesalius single-handedly had overthrown the doctrine of Galen, valid for almost one and a half millennia, and replaced the glorification of Galen by his own anatomical work and observations. All predecessors and contemporaries of Vesalius, like Achillini, Berengario da Carpi, or Charles Estienne, were only compilers and blind followers of their forerunners, especially of Galen; they contributed hardly any knowledge to anatomy. Modern medicine had only started in 1543, the publishing year of Vesalius' anatomical masterpiece.

This opinion, valid in medical history for more than fifty years, accepted also by Sudhoff, Garrison, and other authors, has been shaken by various recent publications from the USA, England, Switzerland, and Germany.[2] These papers reject Roth's interpretation of the sources as onesided and try to do justice to Vesalius' direct predecessors.

Has this " eclipse of Vesalius " any justification?—that is the question. Is the medical historian only trying to gain the triumph of proving that there are no great men, as Hadamard ironically remarked in 1947 in the Newton festival publication of the Royal Society?[3] Or is the change in the valuation of Vesalius and his predecessors the result of a renewed critical examination of the original sources? Wasn't Vesalius himself at the beginning of his anatomical career a convinced follower of Galen? Other anatomists of his time also diverted from traditional outlooks. Is

* Read under the title, " Eclipse of Vesalius? " at the thirty-third annual meeting of the American Association for the History of Medicine, Charleston, S. C., March 25, 1960.

[1] M. Roth: *Andreas Vesalius Bruxellensis.* Berlin: Reimer, 1892.

[2] For instance the publications of M. F. Ashley Montague, L. Edelstein, C. D. O'Malley, C. Singer, G. Rath, G. Zilboorg and many other papers. The latest publication is Lind's appreciation of Berengario da Carpi in: *J. Berengario da Carpi, A Short Introduction to Anatomy (Isagogae breves).* Translated with an Introduction and Historical Notes by L. R. Lind . . . Chicago, Ill.: The University of Chicago Press, 1959.

[3] " We all know that the triumph for a historian of science is to prove that nobody ever discovered anything." M. J. Hadamard in: *The Royal Society. Newton Tercentenary Celebrations,* vol. 1. Cambridge: University Press, 1947, p. 35.

Vesalius' famous anatomical work *De humani corporis fabrica* only the climax and conclusion of a development which had already begun at the end of the fifteenth century?

Serious attempts in independent thinking about anatomy can only be found when Berengario da Carpi, the most important anatomist of the pre-Vesalian period, represented this subject at Bologna. Gabriele Falloppio, Vesalius' successor at Padua, called him the first rejuvenator of anatomy,[4] an opinion which remained more or less valid during the following centuries. Portal still paid homage to the achievement of Berengario in his *Histoire de l'Anatomie*, published in 1770.[5] Roth on the other hand pulled him apart and saw in him only a vain dialectician.[6]

In more than one hundred dissections—an astonishing number for his time—this much lambasted man collected great anatomical knowledge. He examined critically every part of the body. In doing so, he managed to make several remarkable anatomical discoveries. He described the sphenoid bone at length and mentioned for the first time the sphenoidal sinus; he depicted the tympanic membrane rather well and thought about the function of the auditory ossicles; he worked thoroughly on the blood-vessel system and the digestive tract. He described far better than Galen the mitral valve and tricuspid valve of the heart and the semilunar valves of the aorta and of the pulmonary artery. Berengario discovered in the larynx the duality of the arytenoid cartilages which since Galen had been reported as single only. He knew the brain very well and gave a good description of the ventricles with the choreoid plexus. He also spoke of a canal which connected the third with the fourth ventricle; this canal was later on named aquaeductus Sylvii after the Dutch doctor Sylvius of the seventeenth century.[7]

These anatomical descriptions and discoveries alone would be sufficient to let us see in Berengario a searcher who had the same aim as Vesalius. His scripts disclose furthermore an attitude independent of tradition, hardly to be compared with that of a blind Galen worshiper. Sometimes, when dissecting, Berengario was bound to notice that his anatomical

[4] G. Falloppio: *Observationes anatomicae.* Venetiis: Marcus Antonius Ulmus, 1561, p. 25 (". . . Jacobus Carpensis, primus quoque procul omni dubio anatomicae artis, quam Vesalius postea perfecit, restaurator").

[5] A. Portal: *Histoire de l'anatomie et de la chirurgie.* Paris: P.-F. Didot le jeune, 1770, vol. 1, pp. 271-281.

[6] Roth, *op. cit.*, p. 42.

[7] J. Berengario da Carpi: *Commentaria cum additionibus super anatomiam Mundini.* Bononiae, 1552.—Idem: *Isagogae breves et exactissimae in anatomiam humani corporis.* Argentorati, 1530.

findings contradicted the written heritage. He therefore warned the anatomists in his *Commentaria super anatomiam Mundini* not to follow the authorities like cattle. He valued his own observations and experience higher than textbook knowledge. "Experientia sensualis est mihi auriga!" The experience of my senses is my guiding star.—He wrote these words in his *Isagogae*[8] with the selfreliance of the searcher of the Renaissance. He wrote further that he agreed with Galen's descriptions, but only as far as his own findings did not contradict those descriptions. In spite of this statement, he did not dare to express his doubts of Galen's anatomy clearly and accurately. His self-confidence did not go that far. Obviously he could not imagine that only he had seen facts correctly, that the anatomists before him had not. So he did not follow consistently and to the end the road on which he had started so promisingly, but tried again and again an unsatisfactory compromise with tradition.

His indecisive and hesitant attitude is particularly noticeable in his description of the "rete mirabile," the so-called miracle-net. According to Galen, this is formed by the arteria carotis interna at the base of the skull at a point still under the dura mater. For centuries all anatomists mentioned the "rete mirabile"; Berengario too described it in full detail, but added then, conscious of his own "experientia sensualis": "I have never seen this net and I believe that nature does not construct elaborately what it could do simply. . . . This net therefore does not exist."[9] He hasn't seen it, he refuses to believe in its existence, yet he describes it! How great must have been Galen's authority that Berengario—although he knew better—did not dare to renounce his description of it.

In his description of the arytenoid cartilages he opposed tradition with greater decision. He defended the duality of these cartilages without compromise against the handed-down opinion of the schools; but here too he was afraid of his own courage: "What I said against Avicenna and other authors was said trusting my own observations—but with fear."[10]

One cannot "with fear" overthrow old teaching accepted for more than a millennium. But yet Berengario has to be considered Vesalius' forerunner, because it was his doubt—however carefully voiced—that caused the beginning of the overthrow of the prevailing authority of Galen. The seed which Berengario planted bore excellent fruit; Vesalius was to harvest it thirty years later.

[8] Idem: *Isagogae* ("De rete mirabili secundum communem opinionem, et aliquid de nucha." O 5).

[9] *Ibid.*

[10] Idem: *Commentaria*, p. 397b, *Isagogae* ("De capite gutturis, quod epiglottis dicitur." M 5 ff.).

There are beside Berengario two more anatomists of the fifteenth and sixteenth centuries who are mentioned today as Vesalius' forerunners:[11] Alessandro Achillini of Bologna and Nicolo Massa of Venice. Achillini was a man of independent and critical judgment. He is said to have recognized Galen's mistakes at his dissections and to have pointed them out at his lectures; but in his anatomical work[12] he did not divert from tradition. What he could have stated he withheld to avoid consequences. Criticizing Galen would have subjected him to attacks by colleagues, followers of Galen, attacks which he feared. He therefore has done little to free anatomy from handed-down conceptions.

It is similar with Nicolo Massa whom some authors consider equal to Berengario. It is certain that Massa—here and there—went his own way in his *Liber introductorius anatomiae.*[13] He criticized the contemporary anatomists for their dialectics and promised to describe in his book only what would be found at his dissections. Indeed, he contributed some knowledge to anatomy,—his most important contribution is his description of the prostate. But unfortunately he also dissected animals and applied his findings to the human body, so adding his own mistakes to Galen's. While Galen limited the human muscles of the skin to the platysma myoides, Massa attributed a "musculus membraneus" to the whole human skin. The human caecum he saw as variable: at one time it is the size of a stomach, another time it is like a fingerlong appendix of the thickness of a goosequill. His anatomical script reflects the striving for personal experience and opinion characteristic of that time, yet lacks the impulses which Berengario gave to anatomic research.

Beside these personalities who played a part in the emancipation of anatomy from the bonds of tradition, there is an anatomist who has so far not been sufficiently noticed by research: the Frenchman, Charles Estienne. Estienne was a contemporary of Vesalius. They were even fellow students of the great humanist Jacques Dubois, to whom pupils came from all over Europe. Dubois, a convinced, even passionate, follower of Galen, considered all anatomical findings which contradicted Galen's teaching as abnormalities. If they repeatedly occurred at dissections, he saw in them the proof of a degeneration of the human body, a physical

[11] Especially by M. F. Ashley Montague: Vesalius and the Galenists. In: *Science, Medicine, and History.* Essays on the Evolution of Scientific Thought and Medical Practice, Written in Honour of Charles Singer. London, New York, Toronto: Oxford Univ. Press, 1953, vol. 1, pp. 374-385.

[12] A. Achillini: *De humani corporis anatomia.* Venetiis, 1516.—In *Mundini anatomiam annotationes.* Venetiis, 1522.

[13] N. Massa: *Liber introductorius anatomiae.* Venetiis, 1536.

degeneration which had begun after Galen's time.[14] Dubois did not manage to force either of his two great pupils to adopt his rigid and dogmatic thinking, in spite of brilliant philological knowledge of the Galen text. It has often been demonstrated how Vesalius gradually withdrew from the influence of Galen's authority and how he replaced the traditional picture of the human body by a picture that resulted from his own studies and observations. It has so far not yet been stressed that Estienne too strove for personal anatomical experience in his work *De dissectione partium corporis humani*.[15] His book was completed in 1539, as the preface states—four years before Vesalius' *Fabrica*—, but the printing could, for circumstantial reasons, not be completed. The book was written independently of Vesalius, although it did not appear on the book market until 1545, two years after *Fabrica's* publication.

As motive for his work *De dissectione partium corporis humani*, Estienne selected a motto of Galen's: "an observer of nature shall not trust anatomical books but only his own vision," [16] a motto which he honestly tried to follow. Indeed, his *Dissectio* shows a tendency to advance from traditional outlook to new knowledge. He often announced extensions of Galenic knowledge with the term "accessio ad Galeni sententiam." He justified his divergence from the rigid opinion of the schools with a rather naïve argumentation: "It seems to me that Galen withheld certain facts." [17] He sometimes even dared to take the step which Berengario did not dare to take: he openly criticized Galen. He supported his criticism by his own observation: "Galenus dixit . . . nos vero comperimus." [18] This advance into unexplored anatomical fields leads to surprising results, of which Estienne's description of the canalis centralis in the spinal cord is the most remarkable.[19] The contributions to anatomical knowledge, which Estienne expressly named "additions to Galen's knowledge," must free him from the reputation of being a Galen disciple and compiler of the worst type, as Roth declared him to be.[20]

[14] J. Sylvius: *Opera medica.* Genf, 1630, pp. 83, 144.

[15] C. Stephanus (Estienne): *De dissectione partium corporis humani libri tres.* Parisiis: Simon Colinaeus, 1545.

[16] *"Οστις οὖν βούλεται τῶν τῆς φύσεως ἔργων γενέσθαι θεατής, οὐ χρὴ τούτων ἀνατομικαῖς βίβλοις πιστεύειν, ἀλλὰ τοῖς ἰδίοις ὄμμασιν.* Galenus, *De usu partium* II, 3 (Kuehn III, p. 98).

[17] Stephanus, *op. cit.*, p. 76.

[18] *Ibid.*, p. 74.

[19] *See* G. Rath: Charles Estienne, Anatom im Schatten Vesals. *Sudhoffs Arch. f. Gesch. Med. Naturw.*, 1953, *39*: 35-43.

[20] Roth, *op. cit.*, p. 211.

We must not be surprised that the traditional opinion generally prevailed in spite of Berengario's and Estienne's new and independent knowledge and perception; the weight of tradition could not be got rid of by a single effort. Even the best anatomists were still Galenists during the first half of the sixteenth century; Vesalius too was no exception. Galen's anatomical teaching-structure was so splendid in spite of its mistakes, which were caused by his dissecting only animals—that nobody could help but be influenced by it. Vesalius, the same as Estienne, grew up in the Galenic tradition at the Parisian Faculty. He was completely under the influence of the great Greek at the beginning of his career.

When the well-known Venetian publishing house Giunta asked Vesalius to revise Galen's anatomical scripts for a new edition, he did not change the anatomical facts in the least; his changes were solely of a philological character. His *Tabulae anatomicae* still fully represent Galen's spirit; even in the *Fabrica* he did not divert in principle from tradition. In his terminology he follows the " princeps medicorum," Galen, knowingly and consistently, even up to the clumsy numbering of the muscles. It took time before Vesalius, as well as other authors, realized that Galen could err.

In some cases Vesalius held to tradition. Thus, he could not free himself of the Galenic opinion that the blood passes through pores in the septum of the heart from the right into the left ventricle. Vesalius searched in vain for a visible anatomical connection between the right and left ventricle, yet he did not try to solve the problem which had arisen here, but accepted Galen's doctrine of the blood movement.[21] It was presumably also due to this conception, according to which blood flows through the veins to the periphery, that Vesalius denied the existence of valves of the veins. The Italian anatomist Giovanni Baptista Canano of Ferrara informed him at the Reichstag in Regensburg in 1546 that he had discovered valves in the vena azygos, the renal veins, and sacral veins, valves which in appearance and function resembled the valves of the pulmonary artery and the aorta. Vesalius denied their existence and presumed that Canano had mistaken for valves thickenings in the wall of the veins at the junction of secondary veins.[22]

As well as Berengario and Estienne, one has to count Canano among the anatomists who strove for independent and personal judgment and so started the renaissance of anatomy. Proof for this is Canano's introduc-

[21] A. Vesalius, *De humani corporis fabrica libri septem.* Basileae: J. Oporinus, 1543. L. VI, C. 11, p. 589.—2nd Ed. 1555. L. VI, C. 15, pp. 743, 746.

[22] J. Steudel: Die Entdeckung der Venenklappen. *Deutsche med. Wchnschr.*, 1955, *80*: 1913-1915.

tion to his description of the muscles, a script that was published in 1541, two years before the *Fabrica*.[23] He accused Galen's anatomy of being monkey-anatomy and endeavoured, with descriptions and drawings, to give a realistic picture of the muscles. Even Roth had to acknowledge that Canano's booklet contains an approach to life-like anatomy.[24] But as modern as his anatomy of the muscles is in its conception and disposition, it is far from being able to touch Vesalius' *Fabrica* which remained for two centuries the model of all anatomical textbooks because of its elaborate text and its unsurpassed illustrations. Canano did not continue his script; presumably he felt that it could not compete with the *Fabrica*. It is also likely that he withdrew the copies of his muscle-anatomy from the book-market for the same reason. Although the influence of his booklet was a minor one, he too shared the aspiration of the time: trust your own eyes more than Galen's textbook (" non solum ex Galeni testimonio, verum et oculis ipsis perspexeris ").[25]

If we consider the picture of the anatomical searcher of the first half of the sixteenth century according to the facts mentioned above, we shall find him critical of tradition, striving to create his own conception through dissections, and increasingly convinced of the rightness of his personal observation and judgment. This is not only a picture of Vesalius, but characteristic also for figures like Berengario, Estienne, and Canano. They paved the road which led Vesalius to his final goal. It was only possible for this anatomical obsessionalist to create his unique *Fabrica* after the ground had been prepared. The *Fabrica* is the first extensive textbook of modern times, resulting exclusively from dissections of the human corpse. Yet it is not justified to concentrate all the lime-light on its author. Some light ought to be thrown on his predecessors and contemporaries who strove to achieve the same goal. Gabriele Falloppio's quotation of the year 1561 is valid again today: " The work that Berengario started, Vesalius completed." [26]

[23] I. B. Canano: *Musculorum humani corporis picturata dissectio.* Ferrara, 1541? Facsimile edition annotated by H. Cushing & E. C. Streeter. Florence: R. Lier & Co., 1925 (*Monumenta medica*, IV, ed.: H. E. Sigerist.).

[24] Roth, *op. cit.*, p. 209.

[25] Canano, *op. cit.*: *Dedicatio* A 11.

[26] Falloppio, *op. cit.*, p. 25.

MEDICAL LITERATURE IN NORTH AMERICA DURING THE COLONIAL PERIOD AND THE REVOLUTIONARY WAR *

A Summary

FRANCISCO GUERRA **

In the history of ideas, the facts which had any major bearing on the development of culture were those which were diffused and achieved widespread circulation by reason of being printed and published. These written ideas in themselves constitute an accurate record of their period, and are the best objects of research by the historian.

One of the weaker points in the history of medical science in the present territory of the United States of America is the painful ignorance of its publications, more particularly of those which appeared during the colonial period. Generally speaking, it might be said that the history of medicine has been the interest, either of European authors or of authors whose ideas revolve about European thought, and that American knowledge and contributions have tended to be relegated to a limbo of neglect. On the other hand, any researcher filled with an enthusiasm for fishing American contributions out of that limbo is at once faced with two major problems. The first is the extremely meagre amount of bibliographical material which is available, and the other is a discouraging colossus of unexplored material. As Bell [1955] has pointed out, ". . . the best service that can be rendered to researchers in the early history of science in America at the present moment, is bibliographical."

Two well-defined periods in the history of the United States of America are contained between the years from 1639, when the *Oath* of the Freemen was first printed at Cambridge, Mass., to September 3rd, 1783, when the Revolutionary War was ended by the signing of the Treaty of Paris.

Of the 18,317 imprints which Evans [1903] has recorded in his general bibliography as having appeared between those years, only ninety were claimed by F. R. Packard [1931] as medical items. Using first-hand information, J. S. Billings [1876] and F. H. Garrison [1929] had re-

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corded only twenty-five medical imprints up to the Revolutionary War; however, by incorporating material drawn from the bibliographies by Evans, Haven, Sabin, and Hildeburn, Harriet Rogers [1932] managed to accumulate one hundred and twenty-five items; and R. B. Austin [1958] produced a very much-needed check-list which included almost twice the number of items collected by Packard. The method followed by historians and bibliographers was to accept the early criteria of Evans without further study of the text in question; this meant that entire works were overlooked, as were whole sections of medical material which had appeared under misleading titles, in addition to material which was published in almanacs or periodical publications.

On the other hand, a careful study of imprints previously selected by historians and bibliographers, especially by Packard, has shown that many cannot be considered medical works, being absolutely devoid of medical information. Furthermore, in some cases the bibliographical works just mentioned include what are referred to as "ghost" imprints—entries taken from manuscripts which were never actually published, books which were not in fact printed until long after the colonial period, or which were printed abroad. The inclusion of such entries in a critical bibliography can be justified because these entries serve a multiple purpose: in the first instance, they tend to clarify prevailing errors; secondly, they allow of a record, for practical purposes, of all the manuscript medical material of the period; and, in addition, they make it possible to extend the bibliographical information to foreign publications by American authors.

A revaluation of the medical context contained in the books, pamphlets, and broadsides printed between 1639 and 1783 in the present territory of the United States of America yields a total of 750 imprints, in English, German, French, and Latin; 230 of these imprints were not recorded by Evans. The subject-matter of these imprints covers practically every topic of the medical sciences—be it epidemics, internal medicine, surgery, pharmacy, dentistry, veterinary medicine, vital statistics or medical bibliography. The catalogues which were distributed by booksellers, or those printed by libraries, afford a cross-section of the medical authors to whom physicians and laymen usually referred. The bills of mortality which were printed annually in some cities indicated the morbidity and mortality by sex, age, and disease. Many books and pamphlets were concerned with the major colonial epidemics, such as those of smallpox, diphtheria, and measles. The first was T. Vincent's *Account of the Plague in London*, printed at Cambridge, Mass., in 1667. Others debated the vital questions of medical education, professional practice, internal diseases, and hy-

giene. In some cases religious publications show an awareness of psychiatric problems and their treatment in colonial times.

Approximately a third of the imprints under consideration are official publications issued by the various governments of the thirteen original Colonies, or by the Continental Congress during the Revolutionary War. The first of such publications appeared in 1694, when the Assembly of Massachusetts published *An Act for the relief of Ideots and Distracted persons*. These enactments or proclamations must be considered to be the reflection of public concern with such questions as the control of epidemics—by quarantining ships to prevent contagion, or by measures to prevent the spread of epizootics among horses and cattle—the regulation of medical practice, or the care and legal protection of mental patients.

Of the 750 medical imprints studied, almost 50 were originally printed in England, two originated in Germany, and one in France. It is, however, extraordinarily interesting to note that the thirteen American Colonies were exporting medical doctrines to Europe and Latin America from the beginning of the eighteenth century; such is the case of thirteen books which were first printed in America and subsequently reprinted in England. Three more such publications were reprinted in Germany, and one in France. The names of American authors such as Boylston, Douglass, Coleman, Cooper, Lining, Chalmers, Bard, Kearsley, Rush, and Romans were known to Europeans as authorities on such subjects as smallpox, diphtheria, yellow fever, and medical botany.

The relatively small number, or, in some cases, the superficial education, of Colonial medical practitioners, and the fact that the rural population was spread over an extensive area, led to the widespread popularity of a most interesting type of publication with medical material which has been unjustifiably neglected by bibliographers and historians alike—this is the colonial almanac. More than 1500 titles are known to have been published before 1783, in English, German, Dutch, and French. The first medical almanac was by Samuel Danforth, printed at Cambridge, Mass., in 1647, and in it is recorded an outbreak of smallpox among the Indians in 1633. The vast majority of these almanacs retained the section on astrological medicine which was usually accompanied by the cut showing the influence of the signs of the Zodiac on the various portions of the human anatomy, together with indications as to the propitious and unpropitious times of the year for bleeding and cupping. The emphasis on the theories of astrological medicine is particularly remarkable in the German almanacs which appeared in the Pennsylvania districts, and which are reminiscent of the *Aderlass-Kalender*.

These colonial almanacs are also important sources of bibliographical information about medical publications of which, in some cases, no copies have survived. In addition, fascinating facts are encountered, dealing with multiple aspects of the medical sciences, such as the care of the teeth, treatment of smallpox, diphtheria, consumption, gout, rheumatism, rabies, yaws, and syphilis, which was sometimes referred to as scurvy. A historically valuable chronology of epidemics can be collected from items in these almanacs and an estimate made of the ravages caused in colonial times by smallpox, diphtheria, measles, typhoid fever, and other infectious diseases. The topic of materia medica occupied many pages of some almanacs, and these articles included not only information culled from European herbals and from the books of Culpeper, but also original descriptions of the appearance and properties of indigenous American medicinal plants. These almanacs were the first publications to offer therapeutic procedures invented by Negroes; they contained the best information available on matters of veterinary medicine and the control of epizootics; and they also carried the first advertisements for patent medicines which, in two centuries of fantastic growth, were to produce in America "the golden age of quackery." Because the rural population was so widespread in colonial times, these almanacs were, in innumerable cases, the only source of medical information available to settlers and were therefore the most widely-used reference material in matters of health, and public and private hygiene. For this reason, the addition of more than five hundred medical almanacs to the figure given for other medical imprints seems more than justified.

So far only one medical historian has displayed a proper understanding of the importance of periodical publications as a source of medical information. In 1880 J. M. Toner prepared an index to medical matters contained in *The Pennsylvania Gazette* and another of the newspapers published in Charleston, S. C., both of which have been preserved among the Toner papers in the Library of Congress. Weinberger [1948] and Smithcors [1955] have also carried out partial searches for material relating to dentistry and veterinary medicine published in colonial newspapers. Due to differences of size, purpose, and rates of publication, it should be borne in mind that during the colonial period there were two basic types of periodical publication—magazines and newspapers. Mott [1930] and Richardson [1931] both prepared bibliographies of magazines, which are, however, incomplete. Of the twenty-five magazines found, six of which were unknown to Mott and Richardson, no less than twenty-one contain medical material; in some cases this was of such a nature as to merit the

publications' being placed in the category of scientific or medical magazines. Such is the case of the *Transactions of the American Philosophical Society* of 1769 and 1771.

With regard to the newspapers, the *History and Bibliography of American Newspapers, 1690-1820*, by C. S. Brigham, is invaluable for its record of accuracy. The titles of two hundred newspapers can be recorded up to 1783; in five instances no copies have survived, and as for the remainder, very few complete series of issues have been preserved. To make matters worse, the collections of American colonial newspapers are so widely scattered that the survey of these newspapers has had to be carried out over an extensive area. In the course of this research, over 50,000 miles have been covered by car alone, in pursuit of newspaper collections, so that all the known issues might be surveyed. With very few exceptions, all the colonial newspapers carried items of medical interest. Some of these are essays on medical questions, regarding the prevention or treatment of disease; other items contain news of the spread of epidemics, giving the number and location of cases, and ordering measures for the prevention of spreading contagion—such coverage is particularly detailed in the case of smallpox, the scourge which was so dreaded by the colonial Americans. By following these news-items, or testimonials published by grateful patients, it is possible to obtain a record of the major surgical operations. The endless succession of public controversies between medical practitioners can be followed, and it is possible to establish the founding of medical societies, the early beginnings of medical education by private practitioners, or the start of medical teaching at Philadelphia and New York. The great mass of material gathered deals in large part with advertisements inserted by druggists and apothecaries; it gives an excellent idea of their geographical distribution, as well as of the quality and extent of the pharmaceutical market in colonial times. Advertisements by physicians, not always properly qualified, offering their professional services, by dentists pushing their own inimitable brand of dentifrice, and by farriers possessed of invaluable secrets for the treatment of animals, are also of great interest. There are also enthralling announcements inserted by the unfortunates who had been duped by so-called physicians, relating their sorry tale to the public, with the warning that said practitioner was known to have taken himself off to Philadelphia, and let all who would beware.

From the year 1704, when the publication of *The Boston News-Letter* began, to September of 1785, the two hundred titles of newspapers—mostly printed in English, though twenty-two were printed in German,

and one in French—cover over 1300 years of publication, and counting each publication as a four-page weekly, a total of 250,000 printed pages in large folio is reached, and this is a conservative estimate of the amount of material surveyed. From this unwieldly mass of material, over 10,000 items of medical interest have been unearthed, some of them being of enormous historical value. It can be positively asserted that the strongest stimulating force of American cultural development is to be found in the colonial newspapers, and that no proper bibliographical work on medicine, or any other subject for that matter, can be carried out without a careful study of the contemporary newspapers.

The purpose of this presentation has been to offer a survey of the bibliographical resources unearthed during the preparation of the *American Medical Bibliography*, relating to the medical sciences which originated during two important periods in the history of the United States of America. The material itself provides the best-written history of North American medicine during the Colonial Period and the Revolutionary War.

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EDWIN MILLER SNOW: AN IMPORTANT AMERICAN PUBLIC HEALTH PIONEER*

JAMES H. CASSEDY

Dr. Edwin M. Snow of Providence, Rhode Island (1820-1888), belonged to that generation of workers who, immediately after Lemuel Shattuck retired from the scene, continued the struggle to put the early American public health movement on a firm administrative basis. Members of that generation achieved some important successes in this effort, but none of them made a more noteworthy contribution than did Snow.

Snow rose to prominence in the wake of the great cholera epidemic of 1854. In the absence of a health authority in Providence, he had taken heroic personal action to try to check that epidemic. Then, before the epidemic had run its course, he drew up a report which sharply criticized his city's total lack of sanitary precautions. Finally, he recommended the measures which would deal with the drastic sanitary problems of the community on an effective continuing basis. Sobered by the epidemic and convinced by Snow's persuasive arguments, Providence went on to initiate a significant and far-reaching sanitary reform, one that went into effect a full decade before New York City experienced its great reform.

One of the most important elements in the Providence reform was the establishment in 1856 of a permanent city health department. Snow himself was called upon to be the Superintendent of Health. Working in this position effectively for almost thirty years, Snow became to all intents and purposes America's first professional medical health officer. Certainly there had been earlier paid quarantine officials, vaccination physicians, and scavenging personnel. Yet there had probably not been in America up to that time anyone with such broad scope of authority to look after all phases of the community's health. At least there had been no one who had made such a career of it to the virtual exclusion of private practice.

Snow had the scientific viewpoint of the professional. He thus set forth a program for the *city* health officer which was professional, just as Lemuel Shattuck's great program for *state* public health work had been professional.[1] By far Snow's best guidance in drawing up such a program

* Read at the thirty-third annual meeting of the American Association for the History of Medicine, Charleston, S. C., March 26, 1960.

[1] [Lemuel Shattuck] *Report of the Sanitary Commission of Massachusetts* (abbreviated title). Cambridge: Harvard Univ. Press, Massachusetts, 1948.

at this early date came directly from the noteworthy early reports of the General Board of Health of Great Britain, together with those of the Registrar General's office, the same suggestive sources which Shattuck had drawn upon so extensively.

By 1855, the value of vital statistics in illuminating a community's sanitary needs was little questioned. Snow was among those Americans who were impressed by the brilliant contributions in this field of William Farr and Shattuck. In 1852, Snow had helped Rhode Island to obtain a good State Registration Act, one modelled after the pioneer Massachusetts law. Subsequently, as a member of the State Registration Committee for the next twenty-six years, he personally compiled many of the State Reports and became the State's undisputed authority upon the collection and use of vital statistics.[3]

When the city of Providence carried out its sanitary reform, it provided for vital statistics registration even before it set up its new Health Department. Snow was named City Registrar as well as Health Officer. The city never made a better appointment. Within two or three years it could be accurately claimed that there was "no city, in this country, in which the returns, particularly those of deaths, are so complete and correct as in Providence."[5] Snow maintained this standard of excellence with both his city and state registration reports for the rest of his long career. The unbroken sequence of his reports would provide for future generations a superb repository of statistical and epidemiological data. Snow's careful work in this field ultimately brought him an eminence which was matched only by that of Shattuck, Elisha Harris, and John Shaw Billings in America before 1900. It also brought him a European reputation.

With the flow of accurate vital statistics assured to him in 1856, Snow could embark upon the rest of his sanitary program intelligently and with confidence. Here again he profited directly from the experience of the British sanitarians of the 1830's and 40's, for by now their findings, as he noted, had "become settled maxims in sanitary science."[6] He thus accepted without question the miasmatic concepts of disease of Southwood Smith. He also accepted enthusiastically the full implications of Edwin Chadwick's "Sanitary Idea." This concept held that the excess of disease

[3] "Report of the Committee on Registration," June 12, 1878. *Tr. Rhode Island Med. Soc.*, 1879, *2*: 61-63.

[5] Edwin M. Snow, *First Annual Report of the Superintendent of Health of Providence.* Providence: Knowles, Anthony & Co., 1857, p. 7.

[6] *Ibid.*: p. 9.

and death among the poor in cities was largely preventable since it resulted from environmental conditions of filth and dirt which were removable.[8]

We need not here go into the lurid details of the filthy conditions which confronted Snow in the poorer sections of Providence. Certainly they were similar in nature, if not in magnitude, to those which the British sanitarians had already faced. As a professional, then, he could hardly do better than to urge for his city the same remedies which those men had begun to use so effectively. He thus recommended a single city-wide water system; a comprehensive sewerage system; regulations or standards for cesspools, privies, and plumbing in general; and a more efficient system of garbage removal. There would be, of course, a long process of public discussion before Providence, like other American cities, would get around to pass the necessary legislation to actually launch these measures. Some were not put into effect until the twentieth century. This did not make the Sanitary Idea any less valid as a civilizing and health-promoting force. It merely reflected the inertia of citizens and municipalities during the intervals between epidemics.

When it came to defining his own day-to-day functions as a local health officer, Snow laid out a pattern of activities which again followed precisely the one worked out by the English reformers. His outline can be regarded as being one of the first definitions of the duties of the American municipal health officer as a professional man. Such an officer, Snow wrote, should be concerned with " the whole subject of the public health." He should have charge of the registration of vital statistics and of their interpretation. He should investigate communicable diseases and try to control them. He should regularly inspect food and housing and have the authority to order improvements in both areas. Above all, as the core of his program, the health officer should search out and remove any form of filth or nuisance and investigate all complaints of nuisances which may be made.[9]

There was no doubt in Snow's mind that ordinary sanitary work against local nuisances had a demonstrable effect in preventing all of the so-called zymotic diseases. To this end he warred against the keeping of hogs in the city. He campaigned against slaughter houses. He prosecuted citizens whose garbage cans were uncovered. He conducted special house-to-house inspections every spring. And, year in and year out, he was on

[8] Edwin Chadwick, *Report . . . On an Inquiry Into the Sanitary Condition of the Labouring Population of Great Britain.* London: W. Clowes and Sons, 1842.

[9] Edwin M. Snow, *Statistics and Causes of Asiatic Cholera* . . . City Document No. 5, Providence: Knowles, Anthony & Co., 1855, pp. 17-18.

the lookout for treacherous sources of sewer gas, for leaking drains, and for rotting potatoes or vegetation. In an era during which few physicians accepted the germ theory of disease, Snow held a standard anti-contagionist view, one which held the filth and smells of the city largely responsible for its communicable diseases. There is no doubt that acting on this view he was an efficient health officer, for, as one of his contemporaries remarked, Snow "could scent disease in decay, if anybody could." [7]

Like most sanitarians of his day, however, Snow believed in the contagiousness of smallpox as firmly as he did in the miasmatic origin of cholera and most other diseases. Against this disease he thus employed effectively the whole range of specific measures which had developed: the isolation of patients at home or in the pest house; warning of the populace by flags or placards; quarantine of infected vessels; and fumigation of houses and ships by the burning of sulphur. But above all, he vigorously promoted vaccination. In 1856 he established a weekly public vaccination clinic. Moreover, he obtained a city ordinance which required children entering public schools to present a certificate of vaccination. This would remain an enlightened public health measure for many years. Snow always maintained that the vaccine virus which he and his vaccinators used was of direct arm-to-arm descent from the original supply which Benjamin Waterhouse had received from England in 1800. It was a matter of pride with Snow that the vaccine was still pure. It was also a matter of pride that his stern measures against smallpox kept the deaths from this disease at a low level.[8]

All in all, the extensive sanitary program which Snow inaugurated in Providence was almost unique in the United States in the 1850's. As one observer remarked, public hygiene then generally received but little attention. "It lies almost a dreary waste in our annals of progressive science," and only here and there could one see "a solitary devotee, earnestly engaged in his sanitary and statistical labors unaided and alone." [9] Americans were thus impressed by what Snow was doing. General P. M. Wetmore of the New York Sanitary Association looked up to Snow, he said, as he would "to some extraordinary specimen of

[7] Charles V. Chapin, *Twentieth Annual Report of the Superintendent of Health of the City of Providence.* Providence: The Providence Press, 1903, p. 15.

[8] *See* Charles V. Chapin, *Third Annual Report of the Superintendent of Health of Providence.* Providence: Providence Press Co., 1886, p. 29; also, James H. Cassedy, "Dr. Charles V. Chapin and the Modern Public Health Movement," Ph. D. Thesis, Brown University, 1959, pp. 79, 127-131.

[9] Wilson Jewell, "Remarks," *Minutes* of First Nat. Quarantine and Sanitary Convention, Philadelphia, 1857, p. 4.

humanity, for what he has accomplished in the sanitary regulation" of his city.[10] John Griscom, who had himself tried earnestly to bring sanitary reform to New York, also thought that the nation's doctors and officials should hear about the Providence achievements directly from Snow.[11] Opportunities for this came in the late 1850's.

Between 1857 and 1860 the National Quarantine and Sanitary Conventions were held. These meetings did a good deal to stimulate interest in the systematizing of public health work of the sort that Snow had accomplished, even though few of the delegates were regular sanitary workers. Of the seventy-three delegates who met at Philadelphia in 1857, only two had the title of Health Officer. These were Snow and Dr. S. W. Cowdery of Norfolk. Dr. Henry G. Clark came in his capacity of "City Physician" of Boston. Two cities sent their Port Physicians. The other delegates came to the conventions in their roles as mayors, city councilmen, representatives of medical societies or boards of health.

Snow was one of the few persons who attended all four of the conventions. He played a prominent part in their organization and in their committee work. As Quarantine Officer of Providence, along with his other functions, Snow supported the original principal phase of the conventions' work, the drawing up of recommendations for flexible, humane, and uniform quarantine procedures. Even more important, however, he was, along with Clark, one of those delegates who insisted on broadening the original scope of the meetings to include other sanitary matters besides quarantine. In carrying out this aim, just before the first convention adjourned, the delegates passed Snow's resolution which called for the accurate registration of vital statistics in every state and city. At the second convention, the delegates called upon Snow to prepare a thorough report on registration for the guidance of all American health workers. He worked on this report for the next two years and submitted it at the fourth convention, in Boston.[12]

The onslaught of the Civil War put an end to the annual Quarantine and Sanitary Conventions. During the four years of hostilities, of course, physicians were in the greatest demand in both armies. On the northern side, Snow was among those who took great interest in the work of the

[10] P. I. Wetmore, "Remarks," *Proceedings and Debates*, Third Nat. Quarantine and Sanitary Convention, New York, 1859, p. 107.

[11] John Griscom, "Remarks," *ibid.*, p. 123.

[12] Edwin M. Snow, *Report on Registration*. Boston, 1860. For further details about the four Conventions, *see* Wilson G. Smillie, *Public Health: Its Promise for the Future*. New York: Macmillan, 1955, pp. 258-268.

United States Sanitary Commission. In Providence he popularized the Commission's work and raised funds for it. Nationally, he was one of the eminent physicians who, in 1862 and 1863, were appointed special inspectors of the Union Army General Hospitals. Several of these men would become prominent in public health work: Henry I. Bowditch and Samuel Abbott of Boston, John Bell of Philadelphia, and Stephen Smith of New York. Snow was the only one of the sixty, however, who was then designated as a practicing health officer.[13]

After the Civil War, other communities began to follow the Providence example in establishing new permanent public health administrations or reforming old arrangements. New York City's famous reform, for instance, came by 1866, while three years later Massachusetts established its pioneer State Board of Health. Such developments led to a renewal of interest in some sort of organization where sanitarians could discuss public health problems and exchange new ideas. Men like Snow particularly missed the annual pre-war conventions. It was thus an enthusiastic, if small, band which met in 1872 to found the American Public Health Association. Snow was one of the group. Stephen Smith, famous for his leadership of the New York sanitary reform, was named first President of the organization, while Snow, easily dean of American health officers, became Vice-President. Snow remained one of the nucleus of four or five devoted persons who kept the organization going during its early shaky years, and in 1876 he served as its President.[14]

This centennial year marked the high point of Snow's career. The sanitary work which he was doing in Providence was still unmatched in the opinion of Henry I. Bowditch in any other American city except Boston and New York.[15] The year 1876 also saw the Sanitary Idea gathering considerable momentum in the United States. Health officers were by now being joined in the campaign against filth by the sanitary engineers. Moreover, the public as a whole was becoming greatly interested in public health subjects. Bowditch reported that many people now talked about sanitation as others talked about popular novels. Yet even he was somewhat taken back by the " infinite gusto " with which popular writers in the *Atlantic Monthly* seemed to discuss such subjects as sewage and sewer gas.[16]

[13] *See* Charles J. Stillé, *History of the United States Sanitary Commission.* New York: Hurd and Houghton, 1868.

[14] For details of the early days of this organization, *see* Smillie, *op. cit.*, pp. 296-306.

[15] Henry I. Bowditch, *Public Hygiene in America.* Boston: Little, Brown, and Company, 1877, passim.

[16] *Ibid.*

When Snow delivered his Presidential remarks to the American Public Health Association at Boston in 1876, the sanitary movement in the United States had made a good start, but it was still far from having reached its maturity. As Snow pointed out to the delegates, what had been done was little more than "preparations for the great work yet to be done." Vital statistics were still deplorably poor in most places, and many cities had hardly started to make their basic sanitary improvements.[17]

In 1876, with anti-contagonism still in vogue, Snow, like most sanitarians and physicians, looked almost solely to the working of the Sanitary Idea to bring about an end to the excess of disease in our cities. Few of these men, if any, could foresee the turn which public health work would soon take in the pursuit of this ideal. If they had heard Lister at Philadelphia in 1876 or read of the experiments of Koch and Pasteur that same year, they might have gained some inkling of the future. But, as it was, it would be fully another decade before imaginative health officers would begin to apply the lessons and exact data of bacteriology to public health work.

Despite his careful scientific outlook, Snow up to his death in 1888 never accepted the germ theory of disease. Like Pettenkofer in Germany and many other capable men, he took this view in the face of convincing laboratory proofs of the germ origins of some diseases. Yet, like them, Snow served the public health movement well. In the long run, one of his greatest services was to initiate an amazingly fruitful tradition of nationally important public health work in the city of Providence. The most famous of several outstanding figures in the next generation would be Charles V. Chapin, Snow's successor as Health Officer and Registrar of Providence. Chapin would take on the job of defining the whole pattern of principles and duties for the American health officer of the twentieth century in terms of the momentous findings of bacteriology. But it was Snow who had set the pattern for the American health officer of the last half of the nineteenth century. In this he set a great example.[18]

[17] E. M. Snow, "Abstract of introductory address," *Public Health*: Reports and Papers ,Vol. III presented to the American Public Health Association, 1875-1876. New York: Hurd and Houghton, 1877, pp. 222-224.

[18] For additional biographical details on Snow, *see* Charles V. Chapin, "Edwin Miller Snow, M. D.," *Tr. Rhode Island Med. Soc.*, 1889, *4*: 91-96; also *see* Cassedy, *loc. cit.*, chapter V.

NOTES AND COMMENTS

APROPOS OF MAIMONIDES' APHORISMS *

MORDECAI ETZIONY

The (*Medical*) *Aphorisms of Moses* is the second of the series of the proposed "Complete Medical Works of Maimonides" to be published by the Rabbi Kook Foundation.[1] The present book, written originally in Arabic between 1187 and 1190, forms, together with Maimonides' Epitome of Galen and the Commentary on the Aphorisms of Hippocrates, the trilogy of the Maimonidean medical vade mecum. Of the several extant early editions of the Latin rendition of the Aphorisms of Moses, the earliest known is the *Aphorismi Raby Moyses* secundum doctrinam Galeni. Bononiae, impressum impensa Benedicti Hectoris, 1488. However, the two earliest Hebrew translations were both made in Rome, by Zeraḥya (Zerahiah) ben Itzḥak (Isaac) ben Shealtiel Ḥen (Gracian)[2] in 1277, and by Nathan Hameathi,[3] two years later. Our Hebrew text is based on Nathan Hameathi's translation; however, the last Treatise, the 25th., is duplicated, in that both translations are given side by side, much to the delight of some Hebrew readers.

The English section of 32 pages offers the reader a page of Contents, a short Preface, and a seven-page Introduction (and) "Appreciation of the book," wherein the editor likens the above named medical trilogy to the RaMBaM's three theological treatises, the "Book of (Religious) Commandments," the "Mishneh Tora," and the "Commentary on the Mishna," respectively. Here, in the Appreciation, Muntner names some passages and points to some statements in the book which deserve the reader's attention, and we shall therefore, among others, consider some of them further in this review. A major part of the English portion of this volume is taken up by Treatise (Discourse) XXV, chapters 59-97 (pp. XIX-XXXII), which is regarded by Muntner as the most important treatise of the book and about which one is not likely to disagree with him much. This is the discourse of "Maimonides Against Galen" which was rendered from the Arabic directly into English by Joseph Schacht and Max Meyerhof[4] and has been reproduced here. We shall therefore not discuss this treatise at all, since it is readily available to the English reader. A useful "Index of Foreign Terms" closes the English section of the book (pp. 448-468).

Of course Muntner's chief contribution to this scholarly edition is his very thoroughgoing and erudite rendition of the Hebrew text. The first Hebrew publi-

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* This article was originally submitted as a review of: SUESSMANN MUNTNER (Editor). *Moshe Ben Maimon* (*Maimonides*) *Medical Works*, Vol. II: (*Medical*) *Aphorisms of Moses in Twenty-five Treatises*. Hebrew Translation by R. Nathan Hameathi (1283). Jerusalem: Mosad Harav Kook, 1959. xxxii + 470 pp.

[1] See *Bull. Hist. Med.*, 1958, *32*: 180-184.

[2] *Jewish Encyclopedia*. New York, London: Funk & Wagnalls, 1925, vol. 6, p. 63.

[3] *Ibid.*, *8*: 398.

[4] *Bull. Fac. des arts*, Cairo, 1939, *5*, Pt. 1.

cation appeared in Lwow (Lemberg) in 1832 with a second printing in Vilna in 1888. However, that was based on a poor manuscript and prepared for printing by a man who apparently was not at all a scholar. Thus, as Muntner himself points out, ours is the first critical Hebrew edition. And indeed, without Muntner's painstaking explanatory footnotes to Hameathi's difficult and unpalatable translation, the text would have remained an almost untouchable source even to an enthusiastic reader. As an added feature indispensable to the student of history, one finds here also a list of Galen's works cited in the text by Maimonides himself (pp. 399-412) and of those found in Hebrew translation (pp. 414-417). A general Hebrew index (pp. 422-447) completes the editor's task admirably.

We come now to textual considerations. The 25 *Maamarim* (Treatises) of the Aphorisms of Moses are subdivided into *Perakim*.[5] In all the *Perakim*, be they in the original Arabic text, or their Hebrew or Latin translations, the editor has designated their origin. The vast majority of them were taken from Galen and his commentaries on Hipprocates. However, there are also some taken from the works of other writers, many of whom are known to us today, while still others were known to Maimonides but not to us.

In anticipation of the reader's query as to why "aphorisms," Moses himself explains in his own Introduction:

> Said the author, Moses, the son of the servant of God, the Israelite of Cordova. Many people wrote compositions[6] in the form of Perakim [aphorisms][7] in various sciences, but the science which calls for this form most, is the science of Medicine . . . And these compositions which were written in the form of aphorisms are undoubtedly easy [to grasp and retain] and helpful to their reader to understand their meaning and remember them by heart. And this is why the distinguished physician Abukrat[8] composed his famous book which is called "Perakim"[9] along these lines, and also many physicians followed in his footsteps and composed "Perakim," such as the "Perakim" of Razi, and the "Perakim" of Al-Susa[10] and the "Perakim" of Ibn Messuë[11] . . . [And] moreover these "Perakim" which I have produced, I would not say that I have composed them,[12] [originally], but I will [rather] say that I chose them,[12] to wit, I have selected them from the words of Galenus, from all his books, that is to say, from his words which he brought forth through his [original] compositions, and from his words which he expressed in his commentary upon Abukrat . . . And some of the Perakim are

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[5] The plural of *Perek*, usually meaning Chapters. Here, however, it invariably means aphorisms, cf. *Pirkey Avot*, the Aphorisms of the Fathers (Sages).

[6] *Ḥiburim* in Hebrew.

[7] The square bracket used throughout this review indicates my insertion to facilitate the meaning of a phrase or an expression, or another more explicit original version. In general, in the present translation, an effort has been made to retain the original archaic and specific stylistic flavor of this work without harming the intended meaning or the English idiom.

[8] Hippocrates.

[9] *Aphorismoi.*

[10] Author of debatable identity.—*See* Muntner's note 7, p. 11.

[11] Known also as Johannes Damascenus.

[12] Note here the alliteration of *Sheḥibartim* (I composed them) and *Shebeḥartim* (I chose them), respectively, which is so traditionally exploitable after Hebrew Biblical stylistic pattern.

some of the words of Galenus in his own language, and some are mine [own], and some Perakim have resulted from my inquiry into the subject brought up by Galenus. And what [really] motivated me to this was the unexplained portion of the given subject, which could only be clarified from diverse places in the many pronouncements of Galenus . . . And I [therefore] picked the general meaning of the particular portion and have studied it with scrutiny and precision . . .

And these Perakim I have indeed chosen for myself as a memento, and by the same token for anyone like myself, or [even] one that possesses less knowledge than myself, that can find them useful. And I have not [chosen] them to be of use to anyone of the stature of Galenus or [even] one approximating him . . . And moreover, I have introduced in these Perakim subjects belonging to some of the later scholars, whose pronouncements I shall [duly] ascribe to. And I have divided the Perakim into a number of treatises, in order to facilitate their commitment to memory or application, as I see it, and they are 25 treatises:

The first treatise comprises Perakim related to the subjects of medicine, that is to say, the description of the members of the human body [Anatomy] and their functions and their powers [Physiology]. The second treatise comprises Perakim related to the humors. The third treatise comprises Perakim concerning work [function] and general [medical] principles. The fourth treatise comprises Perakim related to the pulse and deduction therefrom [signs and their significance]. The fifth treatise, Perakim which contain instruction concerning the urine. The sixth treatise, [regarding] the remaining instructions [signs and symptoms, and conclusions one may draw therefrom]. The seventh treatise, Perakim comprising many plausible causes, occult or admixt [of known and unknown etiology]. The eighth treatise, Perakim comprising the treatment of diseases in a general way. The ninth treatise, Perakim comprising particular [specific] diseases. The tenth treatise, Perakim comprising fevers. The eleventh treatise, Perakim comprising the seasons of diseases and their limitations, which are called Baḥaranim [crises]. The twelfth treatise, Perakim comprising emptying of the blood [blood-letting]. The thirteenth treatise, Perakim comprising [bowel] emptying purgatives and the enema. The fourteenth treatise, Perakim comprising emesis [emetica]. The fifteenth treatise, Perakim comprising hand-craft [Surgery]. The sixteenth treatise, Perakim comprising [diseases of] women. The seventeenth treatise, Perakim comprising general regimen of health. The eighteenth treatise, Perakim comprising physical exercise. The nineteenth treatise, Perakim comprising bathing [balneology]. The twentieth treatise, Perakim comprising dietetics. The twenty-first treatise, Perakim comprising drugs. The twenty-second treatise, Perakim comprising specifics [organotherapy]. The twenty-third treatise, Perakim comprising a differentiation between [common] diseases and well-known rare [diseases], and an explanation of outstanding cases that have fascinated physicians and confounded laity, [and] we have aimed to verify them. The twenty-fourth treatise, Perakim comprising strange cases, which happen rarely, that were acknowledged and described in medical books and [yet] seldom found.[18] The twenty-fifth treatise, on doubts that have occurred to me in many places in Galenus.

I have ventured to give the reader a sizable portion of the Introduction in English, so as to enable him to appreciate the linguistic character and style of mediaeval writing in general, and the very cumbersome and wearisome Hebrew translation of Hameathi. This, then, together with the presentation of the original complete listing of the Treatises, might justify the venture.

We shall now proceed further with a selection of a few interesting passages, some

[18] Monstrosities.

of which Muntner's English Introduction alludes to and describes, without giving the text. The following selections, however, do not necessarily follow his indications:

122:68 The disease diabetes is seen little because it arises but rarely, for to this day I have not seen it except twice only. (Galen, *De locis affectis*, VI.)[14]

122:69 Said Moses: And I too have not seen it in the West [in Morocco], nor did one of the elders [my teachers], before whom I read, tell me that he had seen it; but in Egypt, I did see one with this disease, and in about ten years—more than twenty people. And this will teach thee, that this affliction occurs mostly in a hot country. And it is possible that the palatability [sweetness] of the water of the Nile is responsible for this impression [of mine]!

128:23 Head ache[15] and the deep sleep[16] originate from the brain. And deep sleep belongs to the level of the volitional functions, just as deep sleep belongs to the level of sensual functions. Even as muscular contraction and convulsion [are levels] of the volitional functions, [so] waking belongs to the level of sensual functions. (Galen, *De morbis et sympt.*, IV.)

128:24 Said Moses, that stupor and deep sleep are [the result of] the absence of function [of the volitional and sensual functions], likewise the contraction and convulsion and waking [are] neighbors that feign to be strangers to each other.

272:35 Abu Merwan, the son of Zohr, mentions many specifics which he tried, for he was an experimentalist, and his son told me of his father's wonders, of his efforts and diligence in experimentation. I therefore find it proper that I mention them in his name, and [indeed], ascribe them to him, albeit others have [also] mentioned some of them. But he verified their experiments. And all those specifics he mentioned in the book Al Teisir and in the book of "Dietetics" which he composed for some of the Andalusian kings; and Abu Ali also mentions some of them in his memorandum; and these are . . . [Here follows a long list of concoctions and potions (pp. 272-276)] . . .

283:25 Said Moses. These exegetes of Galenus' books have already mixed up some terms. And it is therefore only proper that I should remark on them. And [it concerns] these coats of the internal organs that are named in the book De usu partium: "Sphakat,"[17] namely, "membranes," and they said "membrane of the stomach,"[18] "membrane of the internal gullet" [heart],[19] and "the external membrane."[20] And most of these terms are in that very book. And thus they called also the membranes of the eye or "coats" in the very same book, and they called also some of the membranes

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[14] The numbers preceding the aphorism refer to the page and number of aphorism in the edition under review. The titles of Galen's works mentioned throughout this review are given in Latin and as found in Donald Campbell, *Arabian Medicine*, London: Kegan Paul, Trench, Trubner & Co., 1926, vol. II, pp. 13-211.

[15] The Latin ms. has here: *epilepsia*.

[16] Hebrew *Tardema*, here stupor. *See* Gesenius, *Hebrew and Chaldee Lexicon*, 1952, p. 874. Also, compare opening note in S. Mandelkern, *Concordance on the Bible*, New York; Shulsinger, 1955, vol. II, p. 1076, on *Radom*. Note that the terminologic differentiation between stupor and deep sleep as used here and in the following aphorism is not adhered to in our original Hebrew text.

[17] Peritoneum.

[18] Omentum.

[19] *Veshet*, gullet, something stretched and narrow, here—heart; hence "internal membrane" here means the endocardium. *See* M. Jastrow, *Dictionary of the Talmud*, New York: Pardes Pub. Co., 1943, vol. 2, p. 376.

[20] Pericardium.

"Tziphak," and they called the three (sic ! M. E.) "coverings" of the membranes of the spinal cord[81] "Sphak." And that must not mislead thee!

297:89 The physicians are accustomed to call "splenics" those [patients] in whom they find hardening and petrification of their spleen without swelling. But the disease, which is really called dysenteria, is ulceration of the intestines.[82] And this ulceration is either without stench or there is a stench with it. And it is that [kind] which the physicians are in the habit of calling "expanding ulceration,"[83] which is the "peptic" ulceration.[84] And the moist hyssop is the "dirty [or the frothy] wool."[85] (Galen, *De compositione medicamentorum secundum locos,* IX.)

302:1 Said Moses: The copyist [Hunain Ibn Isḥāq] explained that what is to be found in this book, in "Pain of the Nervus Ischiaticus (femoris)"[86] should be in "Pains of Women" (De doloribus mulierum), of Hippocrates, which he rendered from Greek into Arabic and wrote a commentary on it besides Galenus; and one finds in that very commentary an excess of strange things. And of those that he relates there is [one] about a total eclipse of the sun in Sicily, and it came to pass that same year that women gave birth to monstrosities that had two heads, and that it happened to some women that they menstruated through the mouth by vomiting."

311:44 Said Moses: In the extant collection of medical books we find a treatise named "A Treatise by Galenus, [concerning] the prohibition of burying the dead within twenty-four hours," copied by the scholar Batrik. And the topic of this treatise is not unknown, except to one that is not versed in the teachings of Galenus. And what appears to me is, that he refers [rather] to a [another] Greek physician whose name was [also] Galenus and who lived after the great wizard Galenus who is famous for his books. And when this book fell into the hands of Batrik the copyist, he translated it into Arabic, thinking that it belonged to the famous Galenus, since Batrik the copyist was

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[81] Dura mater, pia mater. (Thus only 2 membranes and not 3.)

[82] Ulcera intestinorum.

[83] Ulcus rodens or ventriculi.

[84] Ulcus pepticum (duodeni).

[85] Lana lutosa. Muntner justly notes the difficulty in understanding the last passage. However, it seems that it is not unreasonable to assume that just as Maimonides (Galen) corrects a misnomer in regard to peptic ulcer, so, too, in the case of the last kind of ulceration, the identity of which is still unknown to us but which must have been known to Maimonides, Hameathi, and their contemporaries, the master prefers to describe or name it, according to him more appropriately, "dirty or frothy wool" rather than "moist hyssop." This type of descriptive nomenclature is, of course, not new in medicine and has been in universal use to this day; and clumsy as many of these "terms" may be, they all show how eager the medical linguists were to so clarify the "term" descriptively that they often accomplished the reverse—instead of a precise and clear-cut term they gave us a vivid, at times poetic, but in fact, a vague description of a thing. A striking instance of this we find in the Hebrew-Aramaic element in Vesalius' *Tabulae* and *Fabrica*, e. g. the malleoli could have been designated also in the Hebrew of the Middle Ages by one word, as indeed they are today, namely *Karsulim* or *Karsulaim*, a term which is in any case inadequate, since the ankle as a whole and the talus are also called thus. Nevertheless, the Hebraic informant provided Vesalius with the following descriptive "term": *shetey ketzavot haboltim misheney hakanim*—the two ends that stand out from the two sticks (tibia and fibula)! (See my analysis of term 14, *Bull. Hist. Med.*, 1945, *18*: 422 and compare with terms malleoli and talus, *ibid.*, 1947, *20*: 54 f. respectively.

[86] *Gid hanashē*,—"sinew of the thigh vein." *See* Genesis 32:33, Bible, New York: Jew. Pub. Soc., 1917.

less able [and less informed] in his translating than Hunain [the translator]. Generally, [speaking, however] he belongs to the pleiad of medical writers. And therefore I found it fit to mention diverse aphorisms of what he said in that treatise. (Here Moses quotes a number of Batrik's statements. The following four aphorisms Muntner also quotes in their original Arabic, because he quite rightly notes their importance):

313:52 When Galenus mentions the ignorance of the physicians of his time, and would not return to them [respect] and would not instruct them during consultation at the patients, because they, (the physicians), were recounting and expressing [ostentatiously] invalid opinions. And he says there, and this is his expression, that one could teach more easily and faster the medical precepts of Moses [the Lawgiver] and of the Messiah [Jesus] than instruct these physicians. (Galen, *Megapulsus*, III.)

316:53 Said Moses: It was already expounded for thee, unequivocally, that the Christian people had already appeared, become known and spread, prior to the time of Galen, but apparently did not spread in Greece at the time of Galenus.

316:54 The bruise[87] which is lodged deeply in the appendage of the liver [gall bladder] could heal. Likewise, if one of the hepatic lobes had been cut out, the liver would sometimes recover. And sometimes it appears that the cystic neck [and duct] heals up following a perforation that takes place in the wake of stones, since the cystic neck [and duct] is fleshy, although all these things happen rarely. And many also say that the perforation which takes place in the stomach can heal up. And indeed, I have seen one man in whose brain a large deep puncture was found, and it healed up. But this belongs to those things that happen rarely. (Commentary on the Aphorisms, VI, 2.)

317:56 He [Galenus] said in the third Treatise of it [*De placitis Hippocratis et Platonis*] that the people called Slavs, and Scyths and Berbers, their ire is stronger than the rationality that [is found] amongst us, but [even] among many of the Greeks one finds the same; however, that would apply only to the young and the poor who have neither ethic nor good manner.

All in all, Muntner has once more revived a great classic in Hebrew, and what is equally important, he has made it possible for the more informed reader to understand and enjoy the *Nesher Hagadol*, the "Great Eagle," even more readily.

In this era of unprecedented technical though not necessarily financial facilities for publication, the day is perhaps not too far off when reproductions of all manuscripts and incunabula will be available to the scholar and bibliophile alike. The English medical bibliophile and reader, too, would wish to see all the classics rendered into his language, but until then he will have to satisfy himself with a mere taste of them via a reviewer's whimsical pen.

[87] *Haḥabura*; also swelling resulting therefrom; wound.

MEDICO-HISTORICAL NEWS AND ACTIVITIES

CORRESPONDENCE AND REPORTS

NOTES ON THE DEVELOPMENT OF MENTAL HYGIENE IN THE JOHNS HOPKINS SCHOOL OF HYGIENE AND PUBLIC HEALTH

The Johns Hopkins School of Hygiene and Public Health was founded in June 1916 on the basis of a prospectus written by William H. Welch and Wickliffe Rose. This document had been presented to the General Education Board of the Rockefeller Foundation in May 1915[1] and led to the grant making the School possible. It contains a listing of content areas in which students at the School were to be educated; the list includes mental hygiene.[2] In that period the field of mental illnesses was only beginning to be considered in connection with public health, which was then still primarily concerned with the control of epidemic and contagious diseases.[3]

Welch's interest in mental hygiene was apparently aroused by the publication of Clifford Beers' book, *A Mind That Found Itself*, which came out in 1908.[4] Beers moved to form the National Committee for Mental Hygiene, and Welch was present at the founding meeting, became vice-president at once, and held this office until made president in 1923. Following his year in office he became honorary president, a title he held until his death in 1934.[5] From 1912 until after the end of the First World War, Thomas W. Salmon was the Medical Director of the National Committee for Mental Hygiene and must, of course, have worked with Welch there for at least five years before the United States entered the war.[6]

In typical fashion according to Flexner, Dr. Welch wrote the Prospectus which led to the establishment of The Johns Hopkins School of Hygiene and Public Health just before the deadline for its presentation; indeed Dr. Rose had to press him for the draft to get it in time for the meeting.[7] By this time the war in Europe had already been underway almost a year. Although there is no direct evidence

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[1] *The Johns Hopkins University Circular, School of Hygiene and Public Health, 1958-59 Catalogue*, p. 25.

[2] *The Rockefeller Foundation Annual Report*, 1916, pp. 415-427.

[3] George Rosen: "Public health and mental health: converging trends and emerging issues." In: *Report of the National Conference on Mental Health Teaching in Schools of Public Health*. December 1959. In press: expected publication, Fall 1961.

[4] Clifford W. Beers: *A Mind That Found Itself*. New York: Longmans, Green & Co., 1908.

[5] S. Flexner, and J. T. Flexner: *William H. Welch and the Heroic Age of American Medicine*. New York: The Viking Press, 1941, pp. 348-349.

[6] Earl D. Bond: *Thomas W. Salmon—Psychiatrist*. New York: W. W. Norton & Co., 1950, p. 50.

[7] Flexner, *op. cit.*, pp. 354-356.

that Welch was aware of the increasing psychiatric problems in the European armies, it is probable that he was. The surgeon general of the army referred to psychiatric casualties in the peacetime army in his annual report for the year 1913,[8] a matter probably brought to his attention by Salmon's earlier statistical compilations for the United States as a whole. Welch, at least by 1916 when he made a tour of Europe, knew a good deal about military medicine and its history, and in his report of his trip he devotes a paragraph to the psychiatric casualties.[9]

Welch's mission on this trip was primarily to bring himself up to date on European developments in hygiene and public health and to recruit men for the new school. He found Europe far too involved in the war to consider new departures in education.[10] As Welch turned his attention more and more to problems of military medicine, he worked with Salmon when psychiatric casualties were to be considered.[11]

Dr. Rose also had become interested in war work, making a trip to Europe as a member of a commission on relief for non-combatants in 1914-15,[12] and during this period he had the Prospectus under active consideration.[13]

In a letter to his wife dated December 18, 1918, Salmon said, "The idea about being Professor of Mental Hygiene at the new Department of Public Health at Johns Hopkins is one of Bailey's (Dr. Pearce Bailey) ideas. It is one of the last things I would like to do but he is quite set upon it. He has strange hunches."[14] Bailey and Welch worked rather closely together at times; one suspects that Bailey's "hunch" had its origin in conversations with Welch.[15] Salmon's career certainly would have been known to Welch. Salmon became a psychiatrist by accident of ill-health. While working in a psychiatric hospital he made an excellent study of a diphtheria epidemic. He then entered the Public Health Service and while there again turned to psychiatry, initiating and directing the psychiatric examination of immigrants at Ellis Island and establishing psychiatric hospital services there. Even if he had not known Salmon through the National Committee on Mental Hygiene,[16] Welch would not have missed looking over this psychiatrist for the school that was to teach mental hygiene, along with the rest of hygiene, to his prospective health officers.

Aside from Salmon's letters indicating that he was considering the professorship

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[8] *The Medical Department of the United States Army in the World War.* Washington, D. C.: U. S. Govt. Print. Office, Vol. X, 1929, p. 1.

[9] *The Johns Hopkins Hospital Bulletin*, 1917, n. s. *28*: 154-58.

[10] *Ibid.*, p. 154.

[11] Bond, *op. cit.*, p. 82.

[12] Flexner, *op. cit.*, pp. 355-356.

[13] Although no direct evidence of mental health interest on Rose's part has been found, Dr. Rose's assistant during this period, Dr. John A. Ferrell wrote, "I think the ideas of Welch and Rose were in complete harmony." Personal communication, John A. Ferrell, M. D., Feb. 5, 1960.

[14] Bond, *op. cit.*, p. 149.

[15] Pearce Bailey (Sr.) was the Chief of the Section Neurology, Psychiatry, and Psychology in the Office of the Surgeon General of the Army. He was Salmon's superior officer during the war.

[16] Flexner, *op. cit.*, p. 349.

of Mental Hygiene in late 1918 and early 1919, no record can be found of an offer of the position by the University.[17, 18, 19] It is, perhaps, significant that he gave the first DeLamar lecture dealing with a mental hygiene subject, on April 12, 1920. Dr. Anna Baetjer, who was an associate of Dr. Howell's, recalls that Dr. Howell was interested in mental hygiene but knows of no discussion of a professorship in the School.

The Advisory Board minutes of September 25, 1919 note that Dr. Raymond Pearl, then Professor of Biostatistics, recommended that one of his students take special work in psychiatry with Adolf Meyer, Professor of that subject in the Medical School. A similar note occurs on March 21, 1921 when a student took courses in mental measurements and research. On February 8, 1922 a doctoral thesis by John Rice Miner entitled, "Suicide and its relation to climatic and other factors: A statistical study," was accepted "most heartily" by the Advisory Board of the School because of its high merit. On April 9, 1922, Dr. C. Macfie Campbell gave a DeLamar lecture entitled, "Mental factors in industrial hygiene." Dr. Campbell was at that time a member of the faculty of the Medical School.

The minutes contain similar references to mental hygiene in 1923, 1924, and 1925. At the 86th meeting of the Advisory Board, April 29, 1926, Dr. Esther Loring Richards was appointed Lecturer in Mental Hygiene, the first faculty appointment made in this field.

Arrangements had, however, been made for formal instruction in mental hygiene much earlier. The *Preliminary Announcement* concerning the School, of January, 1918 included "social and mental hygiene" as areas for study by candidates for the degree of Doctor of Public Health.[20] The catalogue of the School for 1921-1922 lists "afternoon lectures" on Saturday at 2:30 by Dr. Richards.[21] These lectures, or case conferences, were addressed to rather large groups recruited from the nursing schools and the school teachers of the community and were not especially designed for the students of the School of Hygiene and Public Health. As already noted, Dr. Richards first appears as a faculty member after 1926.

Dr. A. W. Freeman, Professor of Public Health Administration from 1921 to 1946, often spoke of these years as very frustrating ones to himself and other

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[17] Minutes, Advisory Board of the School of Hygiene and Public Health do not mention mental hygiene at all until Sept. 12, 1919 when it is noted that Salmon delivered a DeLamar lecture entitled, "The field of mental hygiene." There is no reference to the possible selection of a professor in this field.

[18] Dr. Ferrell writes, "If either Dr. Welch or his associate Dr. Howell, who was his successor as Director of the School of Hygiene, made any vigorous request to the Rockefeller Foundation for aid to employ a professor of mental hygiene, I should have been informed. I doubt if a name or such a plan by either was formalized." Personal communication, Feb. 5, 1960.

[19] Personal communications with Dr. Janet Clark, Dr. Howell's daughter, and Dr. Pearce Bailey, the son of the Dr. Pearce Bailey who was closely associated with Salmon, have failed to discover additional information on this point.

[20] *Preliminary Announcement, School of Hygiene and Public Health.* Baltimore: Johns Hopkins Press, January 1918.

[21] *The Johns Hopkins University School of Hygiene and Public Health Catalogue,* 1921-1922, pp. 65-69.

members of the faculty from the point of view of mental hygiene. He felt pressed by specialists in the field to do something more active in the School than the lecture series implied. He interpreted the various DeLamar lectures on the subject [23] as attempts to find concepts or personnel around which a program of research and instruction might be built. He spoke of discussing the matter frequently with Dr. Wade Hampton Frost, Professor of Epidemiology, and both Dr. Frost and Dr. Freeman held numerous conferences with Dr. Adolf Meyer concerning the direction a more active program might take. These men were of very different personalities; they had difficulty communicating and no program emerged.[23]

In 1932 the Eastern Health District of the City of Baltimore was established as a research and practice area collaborating with the School of Hygiene and Public Health. In the process of collecting preliminary statistical information on the District, the health officer, Dr. Harry Mustard, found that while there were some records regarding other health issues, no information was available about mental health. Subsequently an analysis of cases originating in the Eastern Health District was made and a spot map prepared. This was the first epidemiological study in the mental health field in the Eastern Health District.[24]

Mental hygiene research in the School of Hygiene and Public Health began with the establishment of the Mental Hygiene Study in 1934. This research group, consisting of a psychiatrist (Dr. Ruth Fairbank), a biostatistician (Dr. Bernard Cohen), and a psychiatric social worker (Miss Elizabeth Green), was supported as an independent research group within the School by the International Health Division of the Rockefeller Foundation. This was the result of the long struggle toward a *modus operandi* conducted by Freeman, Frost, and Meyer, with stimulation by the Foundation personnel.[25] The Study was the urban counterpart of a

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[23] The DeLamar lectures on mental health subjects from 1920 to 1928 are as follows:

Date	*Lecturer*	*Subject*
April 12, 1920	Thomas W. Salmon	The field of mental hygiene
April 9, 1923	C. Macfie Campbell	Mental factors in industrial hygiene
March 16, 1925	Frankwood E. Williams	The place of mental hygiene in a program of public health
April 3, 1928	Lawson G. Lowrey	Child study work

[24] Wade Hampton Frost: Letter to Dr. John A. Ferrell, International Health Division, Rockefeller Foundation, dated March 2, 1934, stated: "Some two weeks ago Dr. Mustard and I had a very satisfactory conference with Dr. Meyer and Dr. Esther Richards —by no means the first conference which we had had with them, but very much the most satisfactory in that it led to the formulation of what seems to us a sufficiently definite plan which could be begun in a very modest way." Copies of correspondence between Dr. Ferrell and Dr. Frost of this period were obtained through the kindness of Dr. Robert Morison and Mr. William C. Cobb of the Rockefeller Foundation.

[25] Personal communication, Miss Katherine K. Barton, Jan. 8, 1960. The material recorded here represents Miss Barton's recollection of the situation at the time. The author recalls Dr. Freeman having told him that Dr. Meyer originated the study as a protest against leaving mental health out in planning the new health district. Both could have been true, of course, Meyer mentioning the matter to Freeman or Frost who stimulated Mustard to ask for the inquiry.

[26] John A. Ferrell: Letter to Frost dated Jan. 29, 1934 states: "With regard to

rural one in Williamson County, Tennessee. This group surveyed the Eastern Health District for all cases of mental disturbance, illness, or retardation, analyzing the data according to age, sex, geographic location, socioeconomic condition, agency of origin, etc. Later studies, based on 1936 data, carried the analyses farther, including certain comparative diagnostic studies, geographic mobility, and the public's understanding of nomenclature. The original team was replaced by Lemkau, Tietze, and Cooper who performed the analyses of the 1936 data.[26]

The addition of full time personnel in mental hygiene in the faculty of the School led very soon to an expansion of field work in the Eastern Health District. Dr. Fairbank established the Mothers' Advisory Service in 1934. This project was made more intensive and research oriented in 1940 by Cooper and Lemkau and has continued.[27, 28]

The mental hygiene teaching program of the School after 1940 became oriented more completely to its own students. The first course relating the material of personality development to public health practices was given in 1941. Later courses in community organization for supplying mental health services were added, as were clinical opportunities, in the Eastern Health District and in the many other

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mental hygiene, there is still in our organization a real interest in a modest project in this field, I believe, having as an important objective the determination of the steps which can be taken for dealing with the problem in the community.—While I am unable to forecast how the Foundation or its divisions will react to any particular proposal, I would welcome having submitted an outline reflecting consensus of opinion of the group with which you are associated as to a project." (Source—*see* footnote 23.)

[26] Bernard M. Cohen and Ruth E. Fairbank: "Statistical contributions from the Mental Hygiene Study of the Eastern Health District of Baltimore."

I. General account of the 1933 Mental Hygiene Survey of the Eastern Health District. *Am. J. Psychiat.*, 1937-1938, *94*: 1153-1161.

II. Psychosis in the Eastern Health District. *Ibid.*, pp. 1377-1395.

III. Personality disorder in the Eastern Health District in 1933 (With Elizabeth Greene). *Human Biol.*, 1939, *11*: 112-129.

IV. Further studies on personality disorder in the Eastern Health District in 1933 (With Elizabeth Greene). *Ibid.*, pp. 485-512.

P. Lemkau, C. Tietze, and M. Cooper: "Mental hygiene problems in an urban district."

I. Description of the study. *Ment. Hyg.*, 1941, *25*: 624-646.

II. Psychotics. The neurotics. *Ibid.*, 1942, *26*: 100-119.

III. The epileptics and mental deficients. *Ibid.*, pp. 275-288.

IV. Mental hygiene problems in children seven to sixteen years of age. *Ibid.*, 1943, *27*: 279-295.

C. Tietze, P. Lemkau, and M. Cooper: "Schizophrenia, manic-depressive psychosis and social-economic factors." *Am. J. Sociol.*, 1941, *47*: 167-175.

P. Lemkau, C. Tietze, and M. Cooper: "Complaint of nervousness and the psychoneuroses." *Am. J. Orthopsychiat.*, 1942, *12*: 214-223.

———: "A survey of statistical studies on the prevalence and incidence of mental disorders in sample populations." *Pub. Health. Rep.*, 1943, *58*: 1909-1927.

[27] M. M. Cooper: *Evaluation of the Mothers' Advisory Service. Monographs of the Society for Research in Child Development*, vol. 12, no. 1, 1947, serial no. 44. Washington, D. C.: Soc. for Research in Child Development, Nat. Research Council, 1948.

[28] P. Lemkau, C. Tietze, and M. Cooper: "Report of progress in developing a mental hygiene component of a city health district." *Am. J. Psychiat.*, 1940-1941, *97*: 805-811.

cooperating community social, educational, and psychiatric services. The first students coming to the School for specialization in mental hygiene received their degrees in 1942, and the Division of Mental Hygiene presented its first candidate for the degree of Doctor of Public Health in 1941. After World War II a course in military mental hygiene was inaugurated, first given in 1946. The general content of the courses was incorporated in a text book in 1949, revised in 1955.[29]

After the initial researches in the epidemiology of the mental illnesses and conditions in the Eastern Health District were completed, research interest turned to the epidemiology of certain specific conditions. This work, largely under the direction of Dr. Benjamin Pasamanick, Associate Professor in the Division of Mental Hygiene 1950 to 1955, investigated the relationship of maternal gestational history to the outcome of the pregnancy. Along with this epidemiological research, the clinical study of normal parent-child relationships and the behavior problems of childhood has been continued. In addition, the study of administration of mental health programs has occupied a continuously larger proportion of teaching and research interest. The most recent addition in research and teaching has been in the general area of social psychology with the long term aim of designing an emergency psychiatric service for Baltimore.

These notes represent the development of mental hygiene interest, teaching, and research in the School of Hygiene and Public Health of The Johns Hopkins University. First there was the germ of the idea present at the very inception of the School. The idea originated probably through Welch's contact with Beers and the National Committee for Mental Hygiene and matured in his war experiences. Somehow it led to consideration of establishing a professorship of mental hygiene, though the detail of exactly what happened in connection with consideration of the post by Thomas W. Salmon is now lost. There were years in which teaching in the School was shared with lay groups extensively and in which arrangements were made for particularly interested students to take courses or do special work in psychiatry. During these years the faculty was deeply concerned because no concrete program seemed to be evolving in spite of conscientious work toward that end.

The establishment of the Mental Hygiene Study with the consequent engagement of full time personnel within the School appears to have marked the turning point in development, so that the field of mental hygiene has become an integral and recognized area of instruction and research. Furthermore, the mental hygiene interest has led to the further inclusion in public health education of study in social organization and relationships as related to health.

PAUL V. LEMKAU.

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[29] P. V. Lemkau: Mental Hygiene in Public Health. New York: The McGraw-Hill Book Co., 1949.

THE WOLFF-LEAVENWORTH COLLECTION OF ENGRAVED PORTRAITS AT SYRACUSE UNIVERSITY

At the annual meeting of the Syracuse University Board of Trustees on June 25, 1889, Mrs. Harriet Leavenworth presented that university with "twelve thousand engravings."[1] The collection consisted principally of portraits of physicians and naturalists which had been gathered together by Dr. Heinrich Wolff of Bonn, Germany. The collection had been offered for sale intact by an art dealer in Frankfurt am Main, F. A. C. Prestel, who published a description of the collection in 1885.[2] The title page of this catalog is shown in Figure 1. The collection was brought to the United States as a unit and placed in the College of Fine Arts of Syracuse University.

The Wolff-Leavenworth collection contains a small number of books (69). Among these are a 1500 edition of Joannes de Ketham's *Fasciculus Medicinae*[3] and a 1543 edition of Vesalius' *Fabrica*. Including the books, 5918 separate name entries are listed in the collection. Duplicates presumably account for the discrepancy between this figure and the total figure of 12,000 engravings. Prestel described the collection as follows, exhibiting the enthusiasm befitting his role as entrepreneur:

"Douze mille feuilles environ contiennent, à côté de livres, collections de portraits exquis et en partie fort rares, des gravures superbes, des Xylographies, des eux-fortes de vieux maitres célèbres, des plus recherchées et des plus précieuses; des manières-noires vraiment magnifiques, nombre de figures de médecins, de naturalistes et de physiciens anglais, qui n'ont jamais été livrées au commerce (Privatplates), des Lithographies et des Photographies—le tout dans des exemplaires d'une rare beauté et tous admirablement conservés."[4]

Entries number 72 through 1405 have the heading "Portrait-Sammlung (Engländer)." In this group are several Americans. Entries 724-726 are all of David Hosack of New York; entry 769 is of Thomas Jefferson, dated 1802 (apparently included because of his scientific interests); entry 1336 is of Benjamin Waterhouse of Boston (engraved by R. Reeve); and entries 1371 and 1372 are of Caspar Wistar of Philadelphia.

Entries labeled number 1406 through 5853 are titled: "Porträte von Ärzten

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[1] *Alumni Record and General Catalogue of Syracuse University 1872-99, including Genesee College 1852-'71 and Geneva Medical College 1835-'72* (Syracuse, N. Y., 1899), p. 46.

[2] F. A. C. Prestel: *Catalog der berühmten Sammlung von Portraits von Aerzten, Naturforschern, auch Charlatans etc.* . . . Frankfurt on Main, August Osterrieth, 1885, 176 pp.

[3] This book is described as: "Ketham, Joannes de, fasciculus medicinae. Venetiis, Joan et Gregor de Gregoriis, XXVIII. die Martis, 1500. Fol. Pppbd. 34 Bl. à 64 Zeilen. Mit 9 theilweise blattgrossen Holzschnitten, deren Rand etwas kurz beschnitten ist, überhaupt zeigt d. Buch Spuren des Gebrauchs." On examination it is found to contain 10 full-page illustration plates, two of which were not included in the original 1491 edition of Ketham's work.

[4] Prestel, *op. cit.*, p. V.

Catalog

der

berühmten Sammlung

von

Portraits von Aerzten, Naturforschern,

auch Charlatans etc.

aller Zeiten und aller Länder,

bestehend

aus etwa 12000 Kupferstichen, Schwarzkunstblättern, Holzschnitten in den seltensten und kostbarsten Abdrücken, Zeichnungen, Lithographien und Photographien

aus der Verlassenschaft des Geheimen Sanitätsraths Herrn

Dr. Heinrich Wolff

in Bonn,

mit deren Verkauf im Ganzen die

Kunsthandlung

von

F. A. C. PRESTEL

in

Frankfurt am Main

Rossmarkt 5

beauftragt ist.

Frankfurt am Main
Druckerei von August Osterrieth
1885.

Fig. 1.

etc. aller übrigen Länder." This latter category represents the main body of the collection.

The collection is now housed in the Syracuse University Library under the curatorship of the Rare Book Librarian. Upon application for appointment it is possible for the Library to make available for examination specific portraits in which a prospective user may be interested. The portraits are cataloged under the subject rather than under the engraver, e. g., Fracastoro engraved by Schmidt. It is the Library's practice to supply photographic prints of any of the subjects for reproduction in scholarly monographs or books.

Many noted engravers and artists are represented: Bartolozzi, Dürer, Edelinck, Faithorne, Holbein, Hollar and Rembrandt. Some of the most notable portraits are Dürer's Erasmus, Rembrandt's Dr. Faustus, Hollar's Thomas Hobbes, Holbein's Erasmus, and Bartolozzi's Cagliostro.

LYTT I. GARDNER AND LESTER G. WELLS

FIRST BRITISH CONGRESS ON THE HISTORY OF MEDICINE AND PHARMACY

The First British Congress on the History of Medicine and Pharmacy convened on the 28 September last to consider the theme of "The Evolution of Medical Practice in Britain." Organized by the Faculty of the History of Medicine of the Society of Apothecaries and sponsored by the Wellcome Trust, the Congress was well attended by physicians and historians of medicine from England and Scotland as well as by a few interested persons from elsewhere. Under the presidency of Dr. W. S. C. Copeman the Congress convened in the Apothecaries' Hall for its first meeting with later ones held at the Royal College of Surgeons, the Royal College of Physicians and the Royal Society of Medicine. Among the papers presented and thereafter discussed enthusiastically mention may be made of those of Dr. F. N. L. Poynter on government legislation for the medical profession, Sir Zachary Cope on the place of the Royal College of Surgeons in the evolution of British medical practice, Mr. H. J. Malkin on the influence of obstetricians and gynecologists, Dr. Charles Newman on medical education in Britain, Dr. K. D. Keele on the influence of clinical research, and Mr. Michael Perrin on the influence of the pharmaceutical industry on medical practice. The Congress was terminated with a dinner at the Apothecaries' Hall at which Lord Cohen of Birkenhead talked with wit and wisdom on the purpose and uses of medical history. The splendid organization and the success of this First Congress will, it is to be hoped, result in further and annual meetings.

C. D. O'MALLEY

ANNOUNCEMENTS

NATIONAL NEWS

American Academy of the History of Dentistry

At the annual meeting at Los Angeles, October 14, 1960, the following papers were read: "History of Dentistry in Southern California," J. Franklin Maley; "History of Dentistry in Northern California up to 1923," John E. Gurley; "Dental Services of the Veterans Administration," J. E. Fauber.

Mr. Rolla Burk, Jr. of the University of Maryland received the first prize in the newly established annual essay contest for students in dental schools. The subject of his paper was "Dentistry and Religion."

The next annual meeting will be held in Philadelphia, Pa., October 13, 1961.

National Institutes of Health: History of Medicine Program

The National Institutes of Health in January 1961 established a study section to assist the Public Health Service in the review of grant applications in the history of medicine. Present membership of the History of Medicine Study Section includes Dr. Saul Jarcho, *Chairman*, Dr. John Blake, Dr. Iago Galdston, Dr. Walter Riese, Dr. Frank B. Rogers, Dr. George Rosen, Dr. John B. deC. Saunders, Dr. David Shakow, Dr. Richard Shryock, Dr. Owsei Temkin and Dr. Ilza Veith. Dr. Jeanne Brand is the Executive Secretary of the study section.

Research grants were recently awarded to: Dr. Paul Cranefield, Albert Einstein College of Medicine, "Historical Study of the Problem of Mental Deficiency"; Dr. Claude Dolman, University of British Columbia, "Essays in the History of Bacteriology"; Dr. E. M. K. Geiling, University of Rochester School of Medicine and Dentistry, "Pharmacology and Dr. John J. Abel"; Dr. Gerald Grob, Clark University, "History of the Worcester State Hospital Since 1833"; Dr. Isidor Greenwald, New York University College of Medicine, "History of Goiter in Various Countries"; Dr. Martin Levey, Yale University, School of Medicine, "The Chemical Background of Early Arabic Medicine"; Dr. Levi Lind, University of Kansas, "Studies of the Sixteenth Century Bolognese Anatomists"; Dr. Loren MacKinney, University of North Carolina, "Pre-Modern Practices in Manuscript Miniatures and Texts"; Dr. Curt Proskauer, Columbia University, "History of Oral Hygiene"; Dr. Lelland Rather, Stanford University, "Philosophy and History of Medical Ideas"; Dr. Walther Riese, "The Origins of Modern Psychiatry"; Dr. Patrick Romanell, University of Texas Medical Branch, "John Locke's Manuscripts in Medical Philosophy"; Dr. Wolfgang Schwarz, "Hermann Rorschach, M. D.: A Study of His Life and Work"; Dr. James Young, Emory University, "A History of 20th Century American Quackery."

Ohio Academy of Medical History

The Academy will hold its annual meeting at Granville, Ohio on Saturday, April 22, 1961. The morning session will be devoted to a workshop on Ohio Medical History, while the afternoon session will consist of papers on miscellaneous topics. The speaker at the luncheon will be Dr. Chauncey D. Leake who will

relate his experiences on a recent trip to the island of Cos, the birthplace of Hippocrates. The President of the Academy is Dr. Cecil Striker of Cincinnati. Dr. Adolph Waller of Columbus is Secretary-Treasurer.

University of Illinois

The 1961 D. J. Davis Memorial Lecture on Medical History will be given at 1:00 p.m., May 17, 1961, in Room 221 of the Dental-Medical-Pharmacy Building of the University of Illinois, 1853 West Polk Street, Chicago 12, Illinois. The Lecturer will be Otto F. Kampmeier, Ph.D., M.D., Professor Emeritus of Anatomy at the University of Illinois College of Medicine, Chicago, Illinois. His subject will be "The Turbulent Rise of Medical Education in Illinois."

University of Wisconsin

Dr. Johannes Steudel, Professor and Director of the Institute of the History of Medicine at the University of Bonn, Germany, is currently serving as Visiting Professor at the University of Wisconsin, Madison, Wis.

PROGRAMS OF MEETINGS

Beaumont Medical Club (Yale)

February 3, 1961: A talk by Theodore Sizer on the new insignia, the shields of Vesalius and Harvey now decorating the Historical Library; "The Idea of Atomicity—Basis of Curative Medicine," Frederick G. Kilgour.

Benjamin Waterhouse Medical History Society

February 6, 1961: "Historical Highlights in Medical Ethics," David P. Boyd.
March 6, 1961: "Govanni Battista Morgagni, The Founder of Pathologic Anatomy," C. G. Tedeschi.

Society of Medical History of Chicago

December 14, 1960: "In Defense of Galen," Lester S. King. This paper replaced one by Rachmiel Levine previously announced.
January 25, 1961: "The Case History of a King," Friedrich Wassermann; "The English Malady," Jordan Scher.

NEWS FROM ABROAD

Germany

On August 28, 1960, Dr. Georg Sticker, Emeritus Professor of the History of Medicine at the University of Würzburg, died at Zell am Main. Dr. Sticker had celebrated his hundredth birthday on April 18.

Neuburger Institute of the History of Medicine in Vienna

The Neuburger Institute of the History of Medicine at the University of Vienna (Director: Doz. Erna Lesky, M. D., Ph. D.) has opened an exhibition on "Auenbrugger and the Development of Physical Diagnosis" in commemoration of the publication of Leopold Auenbrugger's treatise, *Inventum Novum*. In 24 show-cases, pictures, manuscripts, originals, and instruments are displayed illustrating the development of diagnostic procedure from the first medical school in Vienna (van Swieten, de Haen, Stoll) to the contributions of Corvisart, Laennec, and Piorry, and the achievements of Skoda, Nothnagel, Wenckebach, and Wilhelm Neumann. Among other objects the stethoscopes of leading 19th century Viennese clinicians can be seen. Only one picture reminds the visitor that the Vienna Institute once could boast Laennec's original stethoscope which, since 1944, has been lost in shifting and re-shifting the material assembled in the Institute. A special series of show-cases is dedicated to the musical life of the Auenbrugger family. The physician's own creation, the libretto to the opera "Der Rauchfangkehrer" (The Chimneysweep), and the original score written by Salieri, lie side by side with the six sonatas dedicated by Haydn to Auenbrugger's daughters. For the first time the public can see the well-known Auenbrugger portrait as well as the hitherto unknown portrait of Skoda which are both in the possession of the Vienna Society of Physicians.

The Institute will be glad to mail exhibition catalogues to those who request them.

BOOK REVIEWS

R. Hoeppli. ***Parasites and Parasitic Infections in Early Medicine and Science.*** Singapore: University of Malaya Press, 1959, xiv + 526 pp., M$25.00.

Among the biotic components of man's environment, parasites undoubtedly have claimed his attention and affected his well-being to varying degrees in time and place. During the last quarter of the nineteenth century, that branch of biology and medicine which deals with parasites and parasitism became known as parasitology. Subsequent years witnessed a burgeoning of this specialty and a diversification into such subspecialties as protozoology, helminthology, and entomology, to the extent that one must now define precisely his particular usage of the word parasite. Hence it is refreshing to encounter in Dr. Hoeppli a scientist and humanist who has produced a readable, scholarly history of this important area in human endeavor.

The aim of this study is "to give a picture of early parasitology by showing the actual knowledge of parasites and parasitic infections of the time together with the prevailing ideas, common beliefs and errors formerly connected with parasites." This aim is achieved admirably in the principal and largest portion of the book, which treats the period "from ancient times to the middle of the seventeenth century when the use of the newly invented compound microscope become more general and opened a new era of investigation." The highlights of the years between 1650 and 1850 are presented concisely but adequately.

Prehistoric man's attitudes toward, and knowledge of, his parasites probably resembled those of certain primitive peoples of today. The earliest records of old civilizations demonstrate that knowledge, beliefs, and superstitions regarding parasites were rather similar in such widely separated geographic areas as China, India, Greece, and Rome. Noteworthy progress in knowledge occurred during certain periods, for example in Greece at the time of Aristotle, in Rome during the first few centuries of the Christian era, and in Arabian countries at the time of Rhazes and Avicenna (10th and 11th centuries A. D.). Nevertheless, "knowledge of parasites and parasitic infections at about the beginning of the Christian era was not very much less than that at the end of the sixteenth century."

Several of the many noteworthy and appealing features of Hoeppli's study will be apparent even to the casual reader. The material is presented, insofar as possible, in its original form: quotations in various modern and classical languages of the western world as well as numerous verbatim extracts of early literature printed in Chinese characters, accompanied by English translations. On the pertinent aspects of Chinese medicine, therefore, we now have a rich source of information which it would be most difficult to obtain otherwise. Throughout the book one is impressed by the copious and accurate documentation of original sources, translations, and commentaries, frequently accompanied by Hoeppli's own comments.

In developing the closest possible approximation to a picture of parasites and parasitism in the life of prehistoric man, the objects of study include what Toynbee would call "arrested civilizations." The author presents his personal observations, extending over a period of more than 30 years, of the various peoples of Borneo,

Malaya, and China, and of the indigenous populations of Fiji and Tahiti. Based thus soundly, and accompanied by appropriate photographs, Hoeppli's comments and conclusions are convincing and happily devoid of the unrealistic aura of academic scholasticism or rank speculation which one too frequently encounters in the writings of men of lesser ability, experience, and critical judgment than our present author.

One's imagination is aroused by such chapter titles as: "imaginary parasites and their role in medicine," "pseudo-parasites and erroneous conceptions of real parasites," "the assumed origin of parasites," "behaviour and peculiarities of parasites known to early writers," "pathogenicity wrongly attributed to parasites," "supposedly beneficial effect of parasites," "use of parasites for therapeutic and cosmetic purposes in Chinese and European medicine," and "the role of the moon in biology and medicine with special reference to parasitic infections."

The author evaluates his own work thus (page vi): "It is not a history of parasitology, as it does not give its complete development in chronological order with subjects presented according to their respective importance. Instead, it is a series of loosely connected essays, each dealing in a comparative way with a special aspect of early parasitology." Although these statements can be justified, one knows that a modest, true scholar is his own severest critic. It is this reviewer's opinion that Hoeppli has made a sound, critical, useful, and interesting contribution to the history of medicine and science.

HENRY S. FULLER

JACOPO BERENGARIO DA CARPI. *A Short Introduction to Anatomy* (*Isagogae Breves*). Translated with an introduction and historical notes by L. R. Lind, and with anatomical notes by Paul G. Roofe. Chicago, Ill.: The University of Chicago Press, 1959. xi + 228 pp. Ill. $5.00.

As in all disciplines of medicine, so in anatomy too the impetus for its renaissance originated in North Italy. The first serious attempts in independent thinking in this subject can be found in Berengario da Carpi's anatomical work; he was the most important anatomist of the pre-Vesalian epoch. Gabriele Falloppio, Vesalius's successor in the anatomical chair in Padua, called him the first rejuvenator of anatomy, an opinion which during the following centuries more or less kept its value, till Roth in his famous Vesalius-Biography (*Andreas Vesalius Bruxellensis*. Berlin, 1892) condemned Berengario as a Galen-disciple and a vain dialectic. So judgment about Berengario was pronounced for the following fifty years. Recently, however, there is a tendency to correct this apodictic judgment of Roth's, the tendency to give credit to the forerunners and contemporaries of Vesalius and with it to gain a correct picture of the pre-Vesalian period. The present book is to some extent the outcome of this tendency.

L. R. Lind, Chairman of the Department of Latin and Greek at the University of Kansas and well-known to the medical historian through his translation of Vesalius's "Epitome," presents an exemplary translation of the *Isagogae breves* (A Short Introduction to Anatomy), which is not Berengario's most important,

but his best known, book. Lind's translation from the Latin original into English is the second translation of the *Isagogae*; the first appeared as early as 1660, but it is—like the Latin original—extremely rare. Lind used the 1523 edition and collated it throughout with the 1535 edition, the last to be printed. The illustrations are those of the 1535 edition.

Lind has written an introduction and historical notes to his translation which show him to be an excellent connoisseur of the anatomy of the 15th and 16th century, with sound knowledge of the original sources and of the whole literature about Berengario. He attacks Roth's onesided point of view and gives Berengario his due position in anatomy, i. e. that of a forerunner of Vesalius who paved the road for him. Furthermore he shows how far Berengario already endeavoured to free himself of the traditional opinions of his time and to rely on his own observation in anatomy.

Paul G. Roofe, Chairman of the Department of Anatomy at the University of Kansas, has supplied the anatomical notes. Although it is not always easy to bring the descriptions of the old anatomists into line with modern anatomical terminology, one will practically always agree with Roofe's careful anatomical notes. Yet some remain questionable, for instance the interpretation of the mysterious "rete mirabile" (miracle-net): "The central branches of the circle of Willis: this is Berengario's unseen rete mirabile" (p. 210). Reading the text of Berengario in the Latin original or in Lind's translation (p. 146/7), one could, indeed, believe that Berengario saw the circle of Willis, for he describes two large ascending arteries which penetrate the skull (certainly the carotid arteries). On the other hand, he speaks of veins which form a subtile net between dura mater and skull, so that one could—according to Hyrtl (*Das Arabische und Hebräische in der Anatomie*. Wien, 1879, § LVII)—consider the choroid plexus as retia mirabilia. Nobody has hitherto been able to correlate the term definitely with any vessel-system, and one has therefore to presume that the rete mirabile was a phantasm of the old physicians.

But this is only an unimportant critical remark which in no way impairs the great value of this book. Since the publication of Putti's biography (*Berengario da Carpi*. Bologna, 1937), Lind's translation of the *Isagogae* is at the same time the best, and most comprehensive, appreciation of Berengario's person and work.

GERNOT RATH

WILLIAM S. HECKSCHER. *Rembrandt's Anatomy of Dr. Nicolaas Tulp*, An Iconological Study. Washington Square: New York University Press, 1958. x + 283 pp. Ill. $15.00.

The "Anatomy of Dr. Tulp," Rembrandt's first group portrait, was commissioned by the Guild of Surgeon-Anatomists of Amsterdam. The picture shows certain members of the Guild watching a dissection by the distinguished physician Dr. Nicolaas Tulp. He is demonstrating the forearm muscles of a cadaver that in life was Aris Kindt, a criminal brought to justice by public execution. The figures are costumed with ceremonial elegance. The public, though undepicted, was present

at this scene, which was a traditional sequel to the execution they had probably witnessed the day before. The anatomy would be followed by a banquet for the Guild members and the feast would end with a torch parade.

If we happened to be unmindful of the true character of this event we could admire Rembrandt's painting without sensing its real remoteness from what we might imagine it to correspond to in our own experience. We might mistakenly recognize as familiar what is in fact not only strange but, it would seem, without modern analogy. If we follow Mr. Heckscher's interpretation it is difficult to relate this "Anatomy" to the modern practice of dissection beyond rudiments so bare as to be trivial. Rembrandt's "Anatomy" was a spectacle occurring before a large audience composed of both the learned and the merely curious, providing instruction for the one and, one must suppose, a kind of awesome excitement for the other. It was presided over by a person of great dignity and authority. It revealed divine wisdom as reflected in the structure of the human body and, therefore, was an act of devotion. It declared the wages of sin and provided for vicarious public atonement by a kind of ritual catharsis. While affirming the mortality of the flesh, it celebrated the triumph of human dignity and enlightenment over death. In order to demonstrate that this event as recorded by Rembrandt meant these things to Dr. Tulp and his contemporaries, Mr. Heckscher has examined the formal and literary traditions that express the cultural ambient of the Renaissance anatomy.

Part of this study examines how Rembrandt was influenced to paint the group as he did and suggests the extent to which he was dependent on examples from the past in solving his artistic problem. To paint a picture of several men grouped about a cadaver might seem to require only the copying of what is before the eyes of the artist onto a canvas, given the technical ability to produce such a copy. But what the mind requires as formal material seems usually to be more than what is immediately at hand. Even the ability to "see" what is being represented cannot safely be assumed without reference to that body of assumptions, attitudes, and knowledge that make up the tradition within which the artist works. The difficulty of escaping from tradition is present even in what would seem to be the most naturalistic of arts, that of anatomical illustration. Everyone once knew that there were pores in the interventricular septum of the heart and they were drawn, doubtless "from life," by observers as keen as Leonardo.

The dependence of the artist on inherited conventions and stereotypes must be assumed by the art historian if he attempts to find the meaning of a painting by identifying in it an accretion of forms and motifs derived from certain prototypes. The psychological basis of this dependence is discussed by E. H. Gombrich in his recently published "Art and Illusion." Many who would be willing enough to admit the great difficulty that the majority of mankind has in doing or thinking anything original may be surprised to find so much of the same limitation in those who are known for their originality. Mr. Gombrich says of this, "I realize that this insistence on the tenacity of conventions, on the role of types and stereotypes in art, will be met with skepticism by those who have not worked in this field," and "the more we become aware of the enormous pull in man to repeat what he has learned, the greater will be our admiration for those exceptional beings who could break this spell and make a significant advance on which others could build." Bearing in mind this tenacity of conventions one can better appreciate the method

employed by Mr. Heckscher in establishing Rembrandt's dependence on a variety of preexisting works of art. "This quest will lead us to scenes of lamentation and of martyrdom and to justice pictures than (sic) can claim to be the legitimate ancestors of Rembrandt's 'Anatomy of Dr. Tulp.' Those forms were, in turn, carriers of certain meanings. Consequently there will be found in the 'Anatomy' a variety of nuances of meaning that will help explain why it is in part a sacrificial scene, in part a ritual scene, and in part a scene of justice." That imitation was also an art theory and therefore an accepted method in the Baroque is cited as a basis for his search for prototypes.

Of particular interest from the point of view of medical history are the numerous illustrations and facsimile reproductions of documents having to do with the public anatomies of the Renaissance and their artistic representation. They bear eloquent witness to that humanistic spirit which in seeking the fabric of Nature in that of the human body found not only scientific enlightenment but a revelation of divinity and relief from a dreadful mediaeval vision of death.

In connection with Vesalius' attitude toward vivisection Mr. Heckscher refers to the opinion of the ancients in a note on p. 167 saying, "The dogmatists among the sects of the Greek physician-philosophers favored vivisection, which, as we know was practiced from the early third century B. C. until the first century A. D." Celsus, however, the earliest and principal authority on this question, merely reports the arguments of the Dogmatists in favor of dissection and their acclaim of Herophilus and Erasistratus who, they say, dissected living criminals consigned to them from prison. Even if this claim of the Dogmatists is accepted, there appears to be no evidence that human vivisection was practiced in the ancient world after the third century B. C.

The following documentary material is included in appendices: an account by Dr. Tulp of a painter, presumably Rembrandt, whom he cured of a curious delusion by assurances and a judicious purging of black bile; a chapter from Alexander Benedictus' "Of the uses of public anatomies, the selection of a cadaver, and the arrangement of an adequate theater"; an interesting description published in 1641 by J. J. Orlers of the anatomical theater at Leiden, where Dr. Pieter Pauw of the Leiden Academy "anatomized several bodies of men, women and sundry beasts to the unspeakably great profit and advance of those that have attended, understood, and perceived this properly"; and finally, data from the Amsterdam Archives having to do with the "Anatomy of Dr. Tulp." The author has provided a superb collection of 48 plates which exemplify the formal tradition of anatomical illustration and document the sources to which he traces the motifs of Rembrandt's great painting.

It should be mentioned that in addition to the excellence of its subject matter, this book is a very handsome example of fine bookmaking.

WILLIAM J. CATHEY

RICHARD H. SHRYOCK. *Medicine and Society in America: 1660-1860.* New York: New York University Press, 1960, viii + 182 pp. $4.00.

No one is better qualified to write about the historical relationships between American medicine and American society than Richard Shryock, until recently director of the Institute of the History of Medicine at the Johns Hopkins University. A specialist in American history, he has explored in numerous articles and books the social and scientific forces that have molded modern medicine, particularly in the United States. How extensive his writings in this field are is attested by the notes in the volume under review which include citations to no fewer than twenty of his other books and articles.

The occasion for the present brief volume was a series of four lectures in 1959 at New York University under the Anson J. Phelps Lectureship. This lectureship has previously been responsible for such distinguished contributions to our understanding of early American history as Charles Andrews' *Our Earliest Colonial Settlements*, Samuel Eliot Morison's *Puritan Pronaos*, and Thomas Wertenbaker's *Golden Age of Colonial Culture*. It is no faint praise to say that Profesor Shryock's little volume is entitled to take its place on the shelf beside these earlier writings.

It is no secret to students of history that there exists no general, comprehensive treatment of the story of American medicine that is scholarly and based on recent researches. This volume will not fill the bill because of its brevity and restriction to the years before 1860, but it will do much to meet the demand for a good introductory sketch of the main lines of American medical development. Social historians will find it particularly rewarding for its many perceptive comments on the interplay between medical and social factors in the growth of the health professions.

The opening lecture traces the origins of the medical profession in America in the seventeenth and eighteenth centuries. Professor Shryock shrewdly notes that it is not enough to say, as some historians do, that the American environment reshaped and reformed British medical institutions. It is true that the rural, unlettered, frontier atmosphere of the New World favored the propagation of such British medical types as the rural surgeon-apothecary who learned his trade via the apprentice's route. But the emergence of the colonial "general practitioner" was due more to a selective immigration from the Mother Country than a simple adaptation to New World conditions. The fact is that few London physicians emigrated to the colonies and that colonists were not opposed in principle to English distinctions in medical practice based on old guild traditions. It would be misleading to say, for example, that American physicians sold drugs when British physicians did not, when the truth was that surgeon-apothecaries on both sides of the Atlantic engaged in this business.

By the 1760's a few notable medical institutions had been founded in America and a native professional tradition had begun to develop. But American medical thought and practice remained backward by European standards. Only Cotton Mather and Benjamin Rush deserve any significant mention among American medical writers in the period from 1620 to 1820. In the European sense, medical science can scarcely be said to have existed at all in the English colonies. Concerning Rush, Professor Shryock ventures the opinion that the time has come to re-evaluate Rush's well-known idea of an underlying pattern of bodily reaction in

disease in view of the findings of such modern scientists as Hans Selye regarding body stress and reactions to illness.

Following his lecture on medical thought and practice, and a look at health and disease in his third lecture, Professor Shryock concludes with perhaps his most interesting lecture on "Medicine and Society in Transition 1820-1860." Here he deals with the impact of romanticism, the rise of the "Paris school," the beginnings of the proprietary medical schools, the burgeoning of quackery and sectarianism, and the doctor's dilemma in a transitional era when he had nothing but drugs to offer, yet knew these were of little use. Did the medical profession actually deteriorate in these years? Professor Shryock thinks not, taking the common-sense view that third-rate medical training was better than no training and that medical legislation which was frequently evaded was better than no legislation at all. The general trend, he concludes, was one of ultimate promise, and history has certainly confirmed this.

This is a most useful little book for students, historians, medical men, and the seeker after general knowledge. If it has a defect, in this reviewer's opinion, it would be the almost exclusive use of seaboard materials and illustrations, particularly from Philadelphia, New York, and Boston, but this is an understandable emphasis in dealing with the antebellum period. This book should be greeted with enthusiasm by everyone concerned with the early social and medical history of this country.

THOMAS N. BONNER

FELIX UHL. *Amerikanische Medizin von Europäern beurteilt.* Thesis, University of Zurich, 1959, 59 pp. (Buchdruckerei, Ferdinand Berger, Horn, Niederösterreich).

This lucid and unpretentious essay, a Zurich dissertation, presents an impressionistic sketch of the development of American medicine, the more valuable for its having been drawn from the accounts of European travelers. It may often be dismaying to see ourselves as others see us. But it is always instructive.

The decades between 1880 and 1930 pre-empt some three-quarters of Dr. Uhl's text. And justly so. For it was in these years, especially in the years before the First World War, that American Medicine came of age. As early as the turn of the century, the verdict of foreign medical men was surprisingly favorable—with the exception of a few of the more jaundiced like Helmholtz and Faure. (Dr. Uhl presents a European consensus on the whole more favorable than that outlined by Professor Thomas Bonner in his recent study of "German Doctors in America 1887-1914," *J. Hist. Med.*, 1959, *14*: 1-17). American surgery, nursing, and hospital administration were generally regarded as being in no wise inferior to European practice. Nevertheless, it was not until the First World War that American medicine proved its maturity to the European medical community in general.

The limitations of Dr. Uhl's study are primarily the limitations of his sources. Almost all of his European sojourners followed the path, well-worn by pious feet, from Boston to New York, from Baltimore to Rochester, Minnesota. Almost all, especially the early travellers, were more than willing to be impressed. But in

any case, visits to the Mayo Clinic and the Johns Hopkins Hospital hardly offered the Continental visitor an adequate picture of American medical practice. Yet Dr. Uhl, despite an unfamiliarity with general American history, has, in his gathering and presentation of so varied a group of European travel accounts, rendered a valuable service to American historians. It is unfortunate that this value is curtailed by an absence of either footnotes or index.

CHARLES E. ROSENBERG

ZACHARY COPE. *The Royal College of Surgeons of England*, A History. Springfield, Ill.: Charles C Thomas, 1959. xii + 360 pp., Ill. $13.50.

To a long list of works, Sir Zachary Cope has now added an entertaining and valuable history of *The Royal College of Surgeons of England*. No man is better fitted for the task of this writing and probably few could bring it off so well.

From about the year 1300 the Company of Barbers and the Guild of Surgeons had represented their "professions." In the reign of Henry the Eighth, in 1540, the Company of Barber-Surgeons was established by Act of Parliament. Not until two hundred and five years later, in 1745, did the Company of Surgeons divorce itself from the Barbers, and in 1800 The Royal College of Surgeons of London was formed. In 1843 the same company took the modern name of The Royal College of Surgeons of England.

There, in a nutshell, is the history. Dr. Cope, having access to all the extant records, has searched deeply. His apology for the conflict between the need for historical accuracy and a readable story is unnecessary; both are in this book.

The College has had its trials and tribulations, arising sometimes from petty human frailties, and sometimes from gross differences of opinion and procedure. A frank portrayal of these impedimenta to rapid progress makes the institution and the author very human.

The account of the acquisition and varied history of the Museum of John Hunter is fascinating. Dr. Cope gives details which I have found in no other book.

Also fascinating are the work-a-day glimpses of the personalities of many of the great surgeons, Bell, Brodie, Cooper, Lister and Liston, to name only a few.

The book covers the relation of the College to medical education, the anatomy acts, licensure, Medical Act of 1858, apothecaries, physicians, dentists, women members, and midwifery.

Chapter 30 is titled "The Library," by the Librarian, W. R. LeFanu, and the following chapter is titled "John Hunter's Museum," by the Anatomy Curator, Miss Jessie Dobson.

Many portraits and illustrations are included. The book also contains short biographies of the leading characters, a list of eponymous lectures and benefactions, masters, presidents, and council members. The Index of Names and the Index of Subjects add their value.

This is an instructive and entertaining book. You, too, I prophesy, will read every word of it.

EMERSON CROSBY KELLY

H. BARUK. *Traité de Psychiatrie: Sémiologie, Psychopathologie, Thérapeutique, Etiologie*, 2 vols. Paris: Masson, 1959, 1570 pp.

From the beginning to the end of the 1570 pages of this *monumental work* the author's *historical approach* is conspicuous. Baruk is one of the most authentic and faithful pupils of Babinski whose fundamental distinction between destroying and merely "functional" lesions remains the point of departure and the never denied frame of reference for the author's own observational, experimental, and philosophical investigations and conclusions. Though the alternative formulation, "organic" versus "functional," has its didactic and practical rather than its epistemological value, and though according to this reviewer the greater intensity and duration of the effects of destroying brain lesions are not always safe differential diagnostic criteria, the distinction between a mental pathology resulting from regional destructions and that resulting from a primary affection of the personality proved helpful in distinguishing three great phases in the history of nineteenth century psychiatry. In this task the author was always anxious to establish a sharp demarcation between those disorders which are due to an organic involvement of the structural "instruments," and those which are rooted in the personality itself. The first phase brought to the fore the concept of dementia and the name of Bayle, the discoverer of general paresis, and above all that of Kraepelin whose precise intention it was to distinguish those mental disorders ending in dementia from the periodical ones. It was left for the second phase, belonging to Freud, to reintroduce the once ignored or neglected psychological factor in mental disease. The third phase springs from psychosomatic medicine and, according to Baruk's experiences, implies the danger of an ubiquitous psychological interpretation extending to the effects of destroying brain lesions. The author strives for a method of his own which should do justice to both the structural instruments or the *neurological* implications of mental disease and to the mind ("esprit") using these structural "instruments." In the first part of the treatise the basic personality concepts and the various methods of examining mentally disturbed individuals are discussed. The second part carries the symptomatology, and the third part includes classification, etiology, and therapy. In his attempt to capture the physiologic mechanisms underlying mental disturbances, the author is guided by the teachings of his own discovery, i. e. of experimental catatonia and the psychopharmacological data so significant of contemporary psychiatry. Though the author's approach is thoroughly observational and experimental, he strongly insists on the moral sources of mental alienation. But he never denies the experimental method on which his "Psychiatrie morale expérimentale" ultimately rests. For the first time in the history of medical thought man's moral nature, far from being cut off from the history of diseases and far from remaining a matter of speculation or belief, enters etiology to become an experimentally demonstrable cause of mental alienation. The moral law cannot be violated without entailing, with an experimental necessity, effects finally of concern to the psychiatrist. The natural history of the effects of injustice begins with a malaise befalling the individual committing the unjust act. The next stage is that of the repression of moral judgment, leading to unconscious accusations, blind hatred, aggressiveness, endless fights, calumnies, and false witness.

The author designed a special test admitting of a precise and experimentally

framed evaluation of an individual's emotionally and humanly tinged sense of justice, and of a comparative study of the latter in normal, abnormal, and delinquent persons. Baruk conceived the idea of a new science of man aiming at an experimental study of the laws presiding over man's reactions. The new science was intended by Baruk to become the science of peace.

Almost each chapter of the work carries important and complete bibliographic references, some of them of a strictly historical nature, all of them most welcome to any worker in this field.

The treatise is most remarkable for the precision of method, the completeness of the subject matter, the broad experience embodied in the text, the intellectual style in which data and conclusions are shaped.

WALTHER RIESE

J. J. PINDBORG and L. MARVITZ. *The Dentist in Art.* Chicago: Quadrangle Books, 1960. 144 pp. Ill. $12.50.

The editors of this dental iconographic volume—dentists of Copenhagen, Denmark—have brought together a selected group of illustrations by European artists and sculptors (with three exceptions) from the sixteenth century to the present time. Each of the illustrations is accompanied by an explanatory text of the artist and work. However, the authors' claim for "an up-to-date volume" has not been met. Most of the material is quite familiar to the dentist-historian as these illustrations have been reproduced many times in dental texts and journals, published dental historical research papers, and even in commercial advertising copy. Nevertheless, the reproductions (especially those in color) of the work of Danish artists are new and of particular interest.

Some errors must be pointed out: firstly, the illustration of a Scythian vase (p. 12) is not the "oldest known representation of a dentist," since this writer (*J. Am. Coll. Dentists*, 1948, *15*: 58) has shown it to depict the inspection of the mouth or jaw that has sustained some injury; secondly, the "Physician's Workroom" illustrated as a woodcut of the 1561 Basle edition of Galen's *Opera Omnia* has previously been reported by B. W. Weinberger (*Bull. Hist. Med.*, 1940, *8*: 987) in the 1550 Venice edition and does not necessarily depict "a dentist standing with an instrument in the open mouth of a patient" (C. Proskauer); and thirdly, the sculpture represented on page 64 entitled "The Schoolteacher as a Dentist" was not made in the 18th century but is a product of the mid-nineteenth century, Wilhelm Schiller & Sons, Bohemia (writer's collection).

There are misstatements and misrepresentations of historical facts—the most glaring of which is the statement that our modern dentist has evolved from the barber-surgeon. This has been refuted so often that it seems incongruous that it should be produced at this date by "both editors eminent in the fields of art and dental history."

This is a curious and interesting volume for the dentist or artist to acquaint himself with some relationship between the arts and the tooth extracting phase of dental practice—or more properly, the treatment of the toothache. A more appropriate title would have been "The Toothache in Art."

MILTON B. ASBELL

THE BULLETIN RECENTLY RECEIVED *

Paul F. Clark. *Pioneer Microbiologists of America.* Madison: The University of Wisconsin Press, 1961. xiv + 369 pp., Ill., $6.00.

Dania Polyglotta, Répertoire bibliographique annuel des ouvrages, articles, résumés, etc. en langues étrangères parus au Danemark, 14, 1958. Copenhagen: Dansk Bibliografisk Kontor, 1960. 109 pp.

Leonard Engel. *Medicine Makers of Kalamazoo.* New York, Toronto, London: McGraw-Hill Book Company, Inc., 1961. viii + 261 pp., Ill., $4.50.

Russell E. Frost. *Beloved Professor. Life and Times of William Dodge Frost.* New York, Washington, Hollywood: Vantage Press, 1961. 350 pp., Ill., $3.75.

Juan B. Lastres and Fernando Cabieses. *La trepanacion del cráneo en el Antiguo Perú.* Lima: Imprenta de la Universidad Nacional Mayor de San Marcos, 1960. 207 pp., Ill.

José Maria López Piñero. *La obra anatomica de Lorenzo Boscasa.* Salamanca, 1960, 39 pp. (Estudios de Historia de la Medicina Española, Universidad de Salamanca, nueva serie, Tomo II, Núm. 6.)

Loris Premuda. "Appunti storici sull'insegnamento della chirurgia nell'Università di Padova." Reprinted from *Acta Chirurgica Italica,* 1959, *15* supplement: 723-729.

———. "Il problema della medicina bizantina nella storiografia moderna." Reprinted from *Atti de XVI Congresso Nazionale della Società Italiana di Storia della Medicina,* 1959, pp. 109-119.

———. "Tradizione Greco-Romana e pensiero medico medioevale." Reprinted from *Acta Medicae Historiae Patavina,* 1958-59, *5*: 95-125.

Bruno Valentin. *Geschichte der Orthopädie.* Stuttgart: Georg Thieme Verlag, 1961. xiv + 288 pp., Ill., $9.45. [In the USA and Canada: Intercontinental Medical Book Corp., New York 16, N. Y.]

Fredrick A. Willius. *Henry Stanley Plummer—A Diversified Genius.* Springfield, Ill.: Charles C Thomas, 1961. viii + 71 pp., Ill., $4.50.

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* The *Bulletin* reserves freedom of decision as to the publications to be listed in this section. Items received, other than those assigned for review, are ultimately incorporated into the collection of the Institute of the History of Medicine.

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